

American Aviation

MANAGEMENT
ENGINEERING
OPERATIONS
MAINTENANCE
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MAR. 3

1952



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Per A. Norlin
President of SAS

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That might well be what the boom operator of this Boeing KC-97 flying tanker is saying, via radio, to the pilot of the Boeing B-47 Stratojet.

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Aeronautical Controls



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Trends

America's aircraft and engine builders are taking every possible action to improve their position in development of military and commercial jet planes. Soon expected to join the ranks is Sir Frank Whittle, who designed the world's first jet engine for Britain's Royal Air Force in 1939 and who is considering an offer to work for a U. S. manufacturer. The aircraft industry already has made good use of former German scientists who went to work for the USAF and Navy here after the war. Many of these German experts are now working for industry firms.

CAB, which expects to establish an all-time record for activity before the end of June, is planning top priority for airline merger applications. At least two and probably four consolidations will be disposed of before 1952 ends; several may be finished by mid-year. Renewal of certificates for both local service lines and the trans-Atlantic routes are on the agenda with the trans-Atlantic case definitely to be decided before the TWA and Pan-Am certificates expire in July. In addition every mail rate case (some of them dating back to 1944) is slated to be wound up by June 30.

Some of the proposed airline mergers are starting to worry the Big Four. If they are approved, TWA, United, Eastern and American may find themselves at a competitive disadvantage. They may start working on mergers themselves as a protective measure.

Foremen and supervisors, normally considered part of management and consequently barred from joining existing labor unions, are giving serious thought to creating their own bargaining units to deal with airlines on wage matters. Two groups have already been formed, one by American Airlines' foremen, the other by supervisors of Colonial Airlines.

Lt. Gen. James H. Doolittle's three-man Airport Commission is expected to recommend to the President after its cross-country survey that most airports remain in their present locations but that some additional safety measures be taken. The group probably will call for reopening of Newark Airport because of its importance to New York but urge that all possible traffic over metropolitan areas be eliminated.

Although non-scheduled airlines had claimed CAB's curb on operating weights of the Curtiss-Wright C-46 would cause them to lose military charter business, only part of their prediction has held up. Irregulars as a group are still getting plenty of military charters but operators of the Douglas DC-4 are getting most of the business. Non-skeds currently are averaging over \$1 million a month in military charter revenues. This, coupled with good commercial earnings, will enable them to put up a strong battle for survival.

The Washington View

How to Beat a Budget

Annual maneuver used by government agencies and departments to retain unessential units when budget time rolls around is now getting a thorough workout. The game consists of eliminating or reducing funds for essential branches or sections in hopes that pressure by public or private groups will cause Congress to restore the money, at the same time leaving intact the units which could have been reduced for economy.

• **Now using this tried-and-true plan** is the Commerce Department, which eliminated from its budget request money needed by the Civil Aeronautics Administration for its airports management and operations advisory unit. This group, which consists of one man and a secretary in each CAA region and a small office in Washington, was established after the war to devote its attention to the 800 surplus airports and to advise municipalities on better ways to operate them.

The Commerce Department's scheme has worked so far. The American Association of Airport Executives has urged its members to "protest most vehemently" the proposed elimination of the unit. Said AAAE's president, Walter E. Betsworth: "We who represent the nation's smaller airports believe that this is one of the most important services CAA performs . . . It is false economy to eliminate the service when we need it most for national defense."

• **CAA itself seems to be trying** the same trick with its air traffic controllers. When Congress approved a pay hike for all government employees, all agencies were told they would receive no money to pay the increase and that the extra funds would have to come by not replacing workers who quit. But CAA ignored this and subsequently found itself lacking enough money to meet payrolls for the rest of the fiscal year. So—it planned to lay off vitally needed traffic controllers in hopes that Congress would provide money to keep them on the job until June 30.

Costs vs. Unemployment

Despite all the hullabaloo about having government buying agencies try to place more contracts in Detroit and other distressed labor areas, there are growing indications the directive recently issued by Mobilizer Wilson with approval of Comptroller General Lindsay Warren (to permit agencies to place contracts in such areas even if the cost is slightly higher) will have little real influence on USAF contracts.

The Air Force, of course, will place as many orders for government furnished property

(GFP) in the Detroit area as possible, but no major contracts issued now will help solve the unemployment situation in the immediate future. And that, after all, is the reason for the Wilson directive. Most big USAF contract awards require months of tooling. By that time, presumably, increased availability of steel, copper and aluminum (making possible greater output of civilian goods) will eliminate the unemployment situation.

• **Those controlled materials** are rapidly becoming more plentiful and DPA is giving serious thought to curtailment of the bulk of the CMP program within a few months. One big reason is, of course, the cutback in aircraft output, thus making available many million pounds of aluminum for civilian and other military uses.

Manpower Pressure Eased

The production cutback order has another ramification in the use of manpower by the aircraft industry. It was only in October that the Aircraft Industries Association estimated that 1,500,000 workers would be on the payrolls of airframe, engine and propeller manufacturers by the middle of 1953. Several hundred thousand more were to be required by aircraft subcontractors. Now the prime contractors are planning to take back many of the subcontracts they issued in order to keep their own employment levels high enough to take care of any war needs. Thus many thousand skilled and semi-skilled employees who were destined to be producing plane parts next year will remain in civilian occupations.

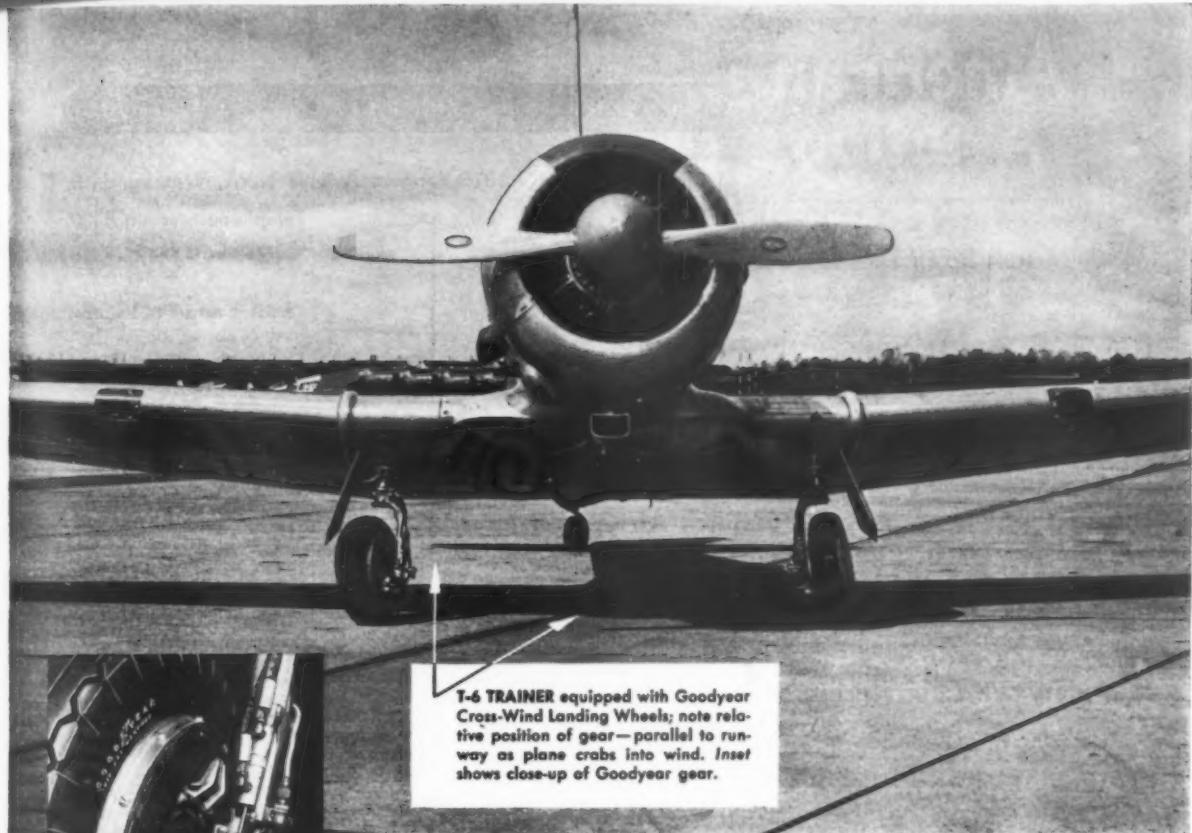
The Spreading Union Shop

Union shop, which is up for Wage Stabilization Board recommendations in three aircraft disputes, is destined next year to become a vital part of any UAW-CIO or IAM-AFL labor demand where it is not already included in a current aircraft contract. If the WSB approves union shops at Douglas-Long Beach, Boeing-Wichita and Ryan Aeronautical, it will be almost impossible for remaining aircraft companies to hold out. A Board decision on the issue is expected first in the steel dispute.

• **Both major aircraft unions** now have established the union shop. The UAW won it from North American Aviation in 1950 while the Machinists have just signed such a pact with Republic. In addition, the IAM has also gained its first such shop with a domestic airline from Eastern Air Lines.

Congressman Leo E. Allen (R., Ill.) meanwhile, has introduced a resolution calling for an investigation of the WSB's "flagrant disregard" of Congress on the union shop issue.

... Robert M. Loebelson



T-6 TRAINER equipped with Goodyear Cross-Wind Landing Wheels; note relative position of gear—parallel to runway as plane crabs into wind. Inset shows close-up of Goodyear gear.

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American Aviation

SERVING THE INDUSTRY SINCE 1937



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other publications

American Aviation Daily (including International Aviation): Published daily except Saturdays, Sundays and holidays. Subscriptions: \$18 one month; \$200 one year. Daniel S. Wentz II, managing editor.

American Aviation Directory: Published twice a year, spring and fall. Single copy, \$7.50. Marion E. Grambow, managing editor.

Official Airline Guide: Monthly publication of airline schedules and fares. Subscriptions: U. S. and countries belonging to the Pan American Postal Union, including Spain and the Philippines, \$9.00 one year. Canada, \$9.50. All other countries, \$11.00. Published from editorial offices at 139 North Clark St., Chicago 2, Ill. Central 6-5804. C. N. Johnson, managing editor.

American Aviation Traffic News (incorporating Air Tariff Reports): Published daily except Saturdays, Sundays and holidays. Subscriptions: \$150 a year. Preble Staver, managing editor.

Electronic Flight Simulators for New Safety in Flight

Military and airline pilots and crews are now being trained more thoroughly than ever before ... as the result of Curtiss-Wright "firsts" in Electronic Flight Simulation.

By realistically reproducing the in-flight characteristics of actual aircraft, Curtiss-Wright Flight Simulators permit problems ... too dangerous to create in the air ... to be practiced over and over again on the ground until coordinated response to emergencies becomes automatic.



An Announcement

THIS ISSUE marks a new milestone in the history of this magazine. We are embarking on an expanded news and editorial policy in line with the constant growth and world-wide significance of the commercial and military airplane.

Ever since its founding June 1, 1937, AMERICAN AVIATION has been recognized as the world authority in the broad and growing field of air transportation. Two major expansions of military aviation, first World War II and then the mobilization resurgence following the outbreak of war in Korea, have of necessity in those periods tended to broaden the focus of a basic editorial policy which began in 1937.

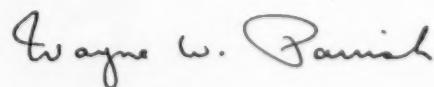
The editors feel that now, however, it is timely to define—or perhaps to re-define—this magazine's news and editorial policy for the long-range future.

Commercial air transportation in the U. S. in 1951 became a billion-dollar industry for the first time. Add to this the commercial air services of the world, the vast operations of military air transport services here and abroad, and the multi-billion-dollar investment in airports, terminals, hangars and bases, and the result is a major industry, a major factor in world economy.

This magazine, then, is dedicated to the *operation*, the *maintenance*, the *equipment*, and the *management* of commercial and military air transportation around the globe.

Our news and editorial policy embraces a vast host of enterprises ranging from the designer and manufacturer of *lift* airplanes to the engines and parts and materials and accessories which go into those airplanes. It embraces all who operate and maintain these airplanes, from the taxi operator and corporation-owner to the largest scheduled air carriers. It embraces airports and all those activities on airports which cater to the requirements of these airplanes. It embraces communications in the broadest sense. It embraces the ever-growing *lift* operations of the various military services.

This policy re-defining also involves a frequency alteration. Instead of receiving every week alternately a newsletter and a magazine, subscribers will receive every other Monday an enlarged, complete, and self-contained magazine. The newsletter will be retained as a feature of this improved magazine. There will be a complete news coverage and additional features. Attuned to a definite objective and to a growing industrial enterprise, the magazine will maintain the high prestige which it has enjoyed from the start. Subscribers are being notified that with the discontinuance of the newsletter on alternate weeks, their subscriptions will be extended accordingly.



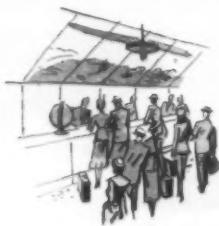
EDITOR AND PUBLISHER

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When & Where

Mar. 3-6—Institute of Radio Engineers, Waldorf-Astoria Hotel and Grand Central Palace, New York.

Mar. 3-7—American Society for Testing Materials, Spring Meeting, Symposium on testing metal powders and metal powder products, Statler Hotel, Cleveland, Ohio.

Mar. 4—National Air Taxi Conference, annual meeting, U. S. Chamber of Commerce Auditorium, Washington, D. C.

Mar. 6-7—National Aviation Education Council, Biltmore Hotel, Los Angeles.

Mar. 14—Institute of the Aeronautical Sciences, Seventh Annual Flight Propulsion Meeting, Cleveland, Ohio.

Mar. 17-19—Second Mid-Western Conference on Fluid Mechanics, Ohio State University, Columbus, Ohio.

Mar. 17-22—American Society of Tool Engineers, Chicago, Illinois (For information, write: Denham & Co., 812 Book Building, Detroit.)

Mar. 20-22—Airport Operators Council, Annual Meeting, Hollywood-Roosevelt Hotel, Los Angeles, Calif.

Mar. 30-Apr. 3—American Association of Airport Executives, Annual Convention, Fort Worth, Texas.

Apr. 21-24—Society of Automotive Engineers, Aeronautic, Aircraft Engineering Display & Technical Air Review, Statler Hotel, New York.

Apr. 22-23—Air Traffic Conference, semi-annual meeting, Atlanta, Ga.

May 8-9—Fifth Annual Wisconsin Aero-nautics Conference, Green Bay, Wisconsin.

May 12-14—Institute of Radio Engineers, National Conference on Airborne Electronics, Dayton Biltmore Hotel, Dayton, Ohio.

May 15-16—American Helicopter Society, 8th Annual Forum, Washington Hotel, Washington, D. C.

May 15-16—Southeastern Airport Managers' Assn., semi-annual meeting, Jacksonville, Fla.

May 17-18—National Pilots Air Meet and Races, Chattanooga, Tenn.

International

May 6—IATA, Fifth Annual Technical Conference, Copenhagen, Denmark.

May 19—IATA, Technical Committee, Thirteenth Meeting, Copenhagen, Denmark.

May 27—ICAO, Sixth General Session, Montreal.

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B.F. Goodrich



Trans-Texas is eighth airline to switch to new dimpled tire

A NEW KIND OF TIRE designed to give longer service life has been introduced by B. F. Goodrich. Instead of conventional ribbed treads, this tire has a new kind of tread design with round, dimple-like indentations in the rubber. The dimple indentations provide better distribution of the tire load and reduce exposure to tread cutting.

Trans-Texas Airways put the tire through a series of extensive tests. They found the new dimpled tire outwore all other tires they have used. It gave 800 landings before retreading. In addition,

the unconventional tread design made retreading simpler and there were fewer carcass rejections. As a result of these tests, Trans-Texas is now switching to the new dimpled tire as standard equipment.

Trans-Texas is the eighth airline to adopt the new BFG dimpled tire. The other airlines who have tested and switched to the dimpled tire are Braniff, Capital, Continental, Empire, Mid Continent, National and West Coast.

B. F. Goodrich is now producing the dimpled tire in seven sizes. The new,

longer wearing dimpled tire is another example of BFG's leadership in rubber research and engineering. Other B. F. Goodrich products for aviation include wheels and brakes; heated rubber. De-Icers; Avtrim; Plastilock adhesives; Pressure Sealing Zippers; inflatable seals; fuel cells; Rivnuts; accessories. *The B. F. Goodrich Company, Aeronautical Division, Akron, Ohio.*

B.F. Goodrich
FIRST IN RUBBER

Editorial

"Most Neglected"

THE PRESIDENT of Curtiss-Wright Corporation is a man of statesmanlike courage. He joined the aircraft industry just a few years ago following a long background in another industry. What he has found since his arrival in aviation has stunned him.

Recently he let loose with some of his forthright beliefs at a press conference in New York. His

comments were based upon an internal study which Curtiss-Wright had made of the aircraft industry as it compares to other industries. This study is a shocker.

Much of what Mr. Hurley said is all too well known within the industry.

But he had the courage to speak out in public. And he stated the problem better than anyone else has stated it.

What he said ought to shock every American. It ought to shock Congress and the Pentagon. The facts are presented elsewhere in this issue.

Here, in brief, is his thesis:

• **U. S. air strength** can never be better than the aircraft industry.

• **The aircraft industry** is "so badly undernourished" as to endanger national defense.

• **The aircraft industry** is still treated as if it were an infant or marginal industry. *It is the most neglected of all important industries in the United States.*

We are accustomed to hysterical statements from politicians. But Mr. Hurley speaks for an important company. He has a wealth of facts to back up his charges.

Other aircraft industry leaders are likewise concerned, but not quite so articulate.

The nub of the matter is the snuffing out of profits by taxes. The aircraft manufacturers are faring far worse than industry in general. The return on investment is so small that there is almost nothing left for development, for research, for incentive, and for stockholders.

The aircraft manufacturers are faring far worse than either their suppliers or their customers.

Mr. Hurley asks with much justification, "Why deny the aircraft industry, which manufactures the airplane and its components, the consideration granted to others?"

Profit margins for aircraft manufacturers are much too low. The present military contracts yield only 2% to 3½% after taxes. Suppliers to the aircraft industry had a 13.8% return on invested capital in 1951 and the major airline customers had a 13.3% return. Curtiss-Wright had but 6%.

Government policies are wrecking the one industry it needs to keep strong. In the long run it will cost the United States much less if a strong aircraft industry is always available. The present hectic and topsy-turvy state of the industry in trying to rebuild hastily is a prime example of unneces-

sary costs to the taxpayer. Mr. Hurley is to be commended for speaking out so frankly.

Newark Airport

THE CONCERN of the people of Elizabeth, N. J., following three airplane accidents in quick succession, can well be understood, but the outcry for the permanent closing of Newark Airport is purely emotional and borders on the hysterical.

After a 20-year safety record, it is something less than sensible to close an airport just because of three unrelated accidents which were only incidentally connected with the field.

The initial outbursts of local indignation were quite natural, but the behavior of local politicians, with selfish motives behind their arm-waving, is a little on the mawkish side. New Jersey politicos have smarted ever since the highly-political Newark Airport was moved under the non-political New York Port Authority. Patronage-hungry politicians who play on the sympathies of the populace should get short shrift.

The New York Port Authority, that strange tri-state body with sky-high salaries and an astonishing overhead, has been something less than firm and forthright in its attitude toward Newark Airport. The manner in which it tried to pass the responsibility on to airlines and Federal government is hardly to its credit.

How long Newark Airport will remain closed is anybody's guess at this writing, but we trust it will be no longer than the time required to complete the new runway which will provide an improved approach and take-off pattern.

The extremes to which some newspaper editors and some politicians have gone in overdoing the series of three accidents is a sad commentary on the times. We originally set out to go into the 20-year record of Elizabeth and tote up the deaths by automobile and truck traffic, fires, arson, homicides, accidents in bathtubs, and the like. But time did not permit such an investigation. Nevertheless, we are willing to bet that the record of accidental deaths in Elizabeth would make the deaths of residents in the three accidents look mighty small. Yet Elizabeth didn't seek to close off all streets and highways just because a lot of children and grown folks got bumped off by automobiles and trucks.

Almost every major airport in the United States has been built away from residential and industrial areas. But the residential areas and industry moved in. Airports attract growth. Airports have increased land values surrounding the fields. The record of airplane accidents occurring in built-up areas has been exceptionally good. The series of three in Elizabeth in quick order must be classed as one of those phenomena which no man can rightly understand. Decisions about airports must be based on 20-year records, not on rare eventualities. In the United States we kill 35,000 people a year in automobile accidents but no one yet has recommended that all motor vehicles be scrapped and highways closed up.

... WAYNE W. PARRISH

Letters

Stepping-Stone

To The Editor:

After reading your two articles concerning college graduates and their chances for airline positions, I thought I would like to present my own views.

It seems to me that many of our college graduates are finding it difficult to realize that their education is merely a stepping-stone to success and not "success" in itself.

A man who majors in medicine has just begun his climb to success after eight years of school and it may take him five or ten years more to earn an income that he feels would justify his investment, time and education.

The same theory applies to a man who majors in merchandising and retailing. If he is willing to start at the bottom with an airline and will show that airline he is going to make the top of the ladder by hard work and patient determination, I am sure that he will enjoy a rapid advancement and a comfortable income.

Let's get off our high horse and call a spade a spade. The ordinary college graduate, regardless of his major, cannot, and should not, expect to step into a position that requires additional background and definite experience.

We have tried to give our students as little theory and as much practical knowledge as we can. We have just installed a complete air freight course that has been highly praised by a number of airlines. We believe the praise is based on the intense practical curriculum that our students receive. I honestly believe that a college graduate would fare better with an airline if he knew more than theory when he starts to work.

We have had graduates from this school start as cargo handlers and in a two year period they have advanced to district freight managers. We have had graduates that did not advance as fast as others but the airlines cannot be entirely at fault.

RALPH L. ROBY

Assistant Director
California Air College
Hollywood, Calif.

Who's Professional?

To The Editor:

Your feature article in the Jan. 24 issue entitled "Are Airlines High-Hatting College Grads?" brings up a point which must be cleared up.

I am surprised by the tendency I note in the article to exclude the airline pilots from the professional ranks, but to include the airline pilots with mechanics, ticket agents, stock clerks and the other people.

The average airline pilot today is the product of years of education and training. It takes only four years of schooling to become an engineer, an accountant or a lawyer, but today's airline pilot is the result of eight years (in most cases more) of schooling at or above the college level.

There is a general tendency by the people in your article to class as a professional man only those who are college graduates.

The dictionary defines profession as: "Calling or vocation, especially one that requires a good education."

With this definition in mind, the airline pilot is a professional man at least in the same sense as the lawyer, engineer or accountant.

R. K. PENFIELD
(1st Officer TWA)

815 Park Drive
Wantagh, N. Y.

Mr. Bartow Comments

To The Editor:

The article "In Defense of Radar"—AMERICAN AVIATION, 2/4/52, p. 63—is another example of creating a state of confusion in relation to crashes. The NEA accident at LaGuardia could not physically have happened as article states. You have to under-shoot while on Approach 22 to crash land in the East River, instead of over-shooting, as stated. This may have been a copy error, but why all the double talk around it?

Reference the AAL crash at Elizabeth, N. J., I wish to list "quote" from the articles—with comments.

Quote

(1) At 3½ miles the controller warned that the plane was 900 feet to the right of the course, the pilot having overshot the localizer. Then the plane disappeared.

(2) Radar accurately reported the plane's position to supplement visual data provided by the ILS, which was used as his primary approach aid. When the plane disappeared from the scope, it did so because it had crashed into a building. No landing system could have saved the pilot and his precious cargo (4).

(3) The experts (5) feel certain the AAL airplane ran into trouble, probably engine (6) icing, which accounted for its sudden drop below the area of coverage of PAR. Only time will tell.

Comments:

(1, 2, & 3) All three of these statements cannot be true at the same time.

(4) This is typical, hysterical cover-up statement and certainly without any basis. If not, what does it mean?

(6) If this had happened, it would not have been the cause of the plane suddenly disappearing from the glide path on the glide path scope, if PAR was in use, as stated.

(5) What experts?

Radar may not have been responsible in either case, but I do know I have watched the GCA-PAR fail during rain conditions, when it was needed to correct a plane on approach which was having interference trouble on ILS caused by a preceding landing plane. The radar failure was because it lost the plane on the scopes because of clutter on scopes due to reflection from sudden heavy rain. This is common

knowledge to GCA operators and a visit to any control tower during a heavy rain or snow storm will verify this statement. I find that very few pilots are aware of these facts and therefore they should not be permitted, let alone asked, to depend upon radar until they are made fully aware of this fact.

The problem of all-weather approach and landings has a solution which can only be arrived at by fully knowing the problem and using equipment that will function safely at all times during all such conditions. GCA-PAR, like ILS, has definite limitations and only when these limitations are fully known and admitted, can a safe workable system, now possible for All Weather Approach and Landings, come into being. Publishing of misinformation only helps to postpone such action and cause more accidents.

J. B. BARTOW

Bartow Beacons, Inc.

(*) The writer, who spent seven years on La Guardia Airport, even living within sight of the field, was indeed in error. CAB's preliminary report noted that the NEA plane landed "½ mile short of Runway 22," an obvious point to one familiar with La Guardia Airport.

(*) J. B. Bartow is one of the country's leading airport lighting specialists, holding patents on the principal runway lighting configurations. In numerous attachments to the above letter he makes it clear that he feels good airport lighting is needed at all airports and, by inference, that it might have helped this pilot in his landing attempt. We agree that good visual aid installations, both in the approach area and on the runway, are scarce.

(*) Interpretation of the comments in these three paragraphs (1, 2, 3) dictate whether or not they are compatible.

(*) Statement 4 meant that it was not lack of electronic guidance data that caused the plane to crash. The controller's comments to the pilot and his corrective action indicate he was getting good information. Perhaps VFR operations, or lighting which simulated VFR operations, would have permitted the pilot to see the runway and make a landing. Since electronic aids appeared to keep the pilot on course during the early part of the approach it appears that some outside factor influenced the final course of the aircraft.

(*) We discussed this accident, officially and unofficially, with CAB and CAA representatives, airline pilots, the Air Transport Association and electronic engineers. These are the "experts" in question.

(*) PAR does not pretend to give ground coverage beyond the limits of the airport where the AAL plane contacted the ground. It is a directed beam angled about 2½-3 degrees above the runway's end. At this stage in the approach ground clutter is prevented because the beam is directed well above general ground obstruction. CAA investigations as of mid-
(Continued on Page 56)



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As appearing in TIME Magazine, February 25, 1952

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AMERICAN AVIATION

Will Vandenberg be reappointed? . . . cover-up on cut-backs . . . politics and the calculated risk

ONE OF THE MAJOR topics of conversation in Washington aviation circles these days is whether Gen. Hoyt S. Vandenberg will be reappointed as Air Force chief of staff when his present term expires on April 30. The word is going around that he will not, and this is partially borne out by the fact Vandenberg has not yet been notified that he will stay, although it is customary to give a chief of staff more notice of the Administration's intentions than the few weeks remaining.

However, it is not yet cut and dried despite the lack of notification, and some informed sources say that he may still be reappointed. Dropping a chief of staff in an election year is not good politics, since it will surely come in for some close scrutiny, particularly by Republicans looking for an opportunity to shoot holes in Administration policy. Although marked by controversies peculiar to the times, Vandenberg's term has generally been an effective one, and he has been free from personal criticism and has worked well with the other members of the Joint Chiefs of Staff, and if Congress starts asking why he was dropped there may be some repercussions that would embarrass the Administration.

Another item of interest is who will replace Vandenberg if he is not reappointed. Two chief contenders are being named: Vice Chief of Staff Gen. Nathan S. Twining and Strategic Air Command Chief Gen. Curtis E. LeMay. The latter, a strong proponent of strategic air power above all else and never noted for diplomacy and tact, may run into some fire from the Joint Chiefs of Staff and the State Department.

If Vandenberg is not kept on, he will find himself in a peculiar position. Since he will not be eligible for full retirement until June, 1953, he would be faced with the choice of stepping down to a lesser job in the Air Force or forfeiting his 30 year retirement benefits.

The Long Count

Administration officials are making a determined effort to convince Congress and the public that the recent cut-back in the aircraft production program is not a cut-back at all, merely an "extension of the build-up period." The gambit appears to be to try to forestall criticism of the snarled-up production program by "proving" the cut-back doesn't exist.

A notable example is a recent speech by Defense Mobilizer Charles E. Wilson who said flatly "There is no cut-back in the realistic schedules designed to achieve our original program." This may come as something of a surprise to prime contractors who have had their schedules pared sharply and to subcontractors all over the country who are being told their services will not be required or required in a greatly reduced degree.

Wilson's remark is true enough if one cares to take his interpretation of the "original" schedules. Generally, manufacturers have been referring to the original schedules as those which envisioned a 143-wing Air Force and a comparable Navy build-up by mid-1954. But not Mr. Wilson. He reached back to the old 95-

wing program, obsoleted months ago by new planning, for his "original" schedules and said we "are going on with the *original* program virtually as planned." By the same token, observers note, he could have selected the old 70-group Air Force as his basis and said we are actually ahead of schedule.

But Air Force Undersecretary Roswell L. Gilpatrick contradicted the impression Wilson tried to create, when he told Congress that USAF peak production schedules had originally been 1,250 planes a month by late 1953 and that they had been cut back to 950 a month some time later. Industry sources estimate that overall peak production (Navy and Army included) will be 1,250 planes a month compared with the previously planned 1,800 a month, a cut of almost 33%.

Wilson also tried to convey the impression that schedules were being accelerated rather than cut. "Far from cutting back," he said, "we shall have to double the production of aircraft actually delivered in December . . . to reach the monthly production peak called for under the rescheduling of the program." Again his statement is true enough though misleading. The new peak production rates of 1,250 planes a month will double last December's output of 600. Wilson neglected to mention, however, that under the original schedules they would have tripled.

In referring to the 95-wing program as the "original" schedule, Wilson is guilty of short memory. In his own third quarterly report, released last October 1, Wilson pointed out that plane output (then about 450 planes a month) would quadruple by October, 1953. This would mean 1,800 planes a month, the schedule envisioned in the 143-wing program, not the 95-wing program. In other words, Wilson himself did not at that time consider the 95-wing program the "original."

Which Comes First?

Washington observers are drawing a parallel between the current administration of the Department of Defense and the Louis Johnson regime of infamous memory, which was largely responsible for the current shortage of operational aircraft because political considerations were put ahead of military needs. It is felt that the same thing is happening again.

A number of top military men feel that there was no need for the "calculated risk" taken in cutting back the aircraft procurement program, other than the considerations of election year economy. They feel that every effort should have been made to break the bottlenecks that were hampering production, rather than adjust the schedules to match lagging producibility.

But don't look for it to break into the open yet. Most military men, in forthcoming testimony, are expected to pay lip service to the "considerations of the national economy" and "realistic scheduling," although they will say that "from the strictly military viewpoint" they still feel that we should build up our defenses as rapidly as possible.

. . . JAMES J. HAGGERTY, JR.



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Operating Statistics of Various Aircraft Companies

(1951 DATA AS CURRENTLY AVAILABLE)

DOLLAR FIGURES IN THOUSANDS

*N.a.—not available

Company	Period	Sales	Profit Before Taxes		Profit After Taxes		Paid In Cash Dividends		% Profit After Taxes
			Amount	% of Sales	Amount	% of Sales	Amount		
Boeing	9 mos. ended	9/30/51	\$235,871	\$10,585	4.5	\$4,055	1.7	\$3,247	80.0
Consolidated Vultee	9 mos. ended	8/31/51	226,000	8,711	3.9	5,923	2.6	2,438	41.2
Curtiss-Wright	10 mos. ended	10/31/51	137,595	10,733	7.8	4,783	3.5	6,668	139.5
Douglas	9 mos. ended	8/31/51	153,372	12,541	8.2	5,250	3.4	2,400	41.8
Lockheed	6 mos. ended	6/30/51	98,054	7,163	7.3	4,047	4.1	1,128	27.9
North American	9 mos. ended	6/30/51	119,979	9,724	8.1	4,450	3.7	2,576	52.9
Republic	9 mos. ended	9/30/51	83,078	N.a.*	N.a.*	2,141	2.6	251	11.7
United Aircraft	9 mos. ended	9/30/51	288,511	21,268	7.4	8,497	2.9	4,779	51.3

CURTISS-WRIGHT'S position is typical of the aircraft industry, as shown in table above.

How Low Profits Stifle Aircraft Industry

Expansion of production impossible with present low rate of return, Hurley and Odlum say.

By ROBERT M. LOEBELSON

IS THE aircraft industry being neglected by government officials? Do airplane and engine builders lack the incentive to expand production? Are airplane manufacturers getting less favorable tax treatment than other producers? Is aircraft production, so vital to America's defense, suffering as a result?

If Roy T. Hurley, board chairman and president of Curtiss-Wright Corp., is any authority, the answer to each one of these questions is "yes." In what seems destined to be the first round in a battle for "a national policy for the methodical development of the aircraft industry in times of war, during emergencies or in times of peace," Hurley claims airplane and engine producers represent the most neglected of all important industries in the U. S.

He charges that the Government has deprived the aircraft industry of the freedom of action it has permitted other industries. The Curtiss-Wright executive, claiming his firm is fairly typical of the industry generally, compares it with the 50 largest companies in the country, ranging from General



Hurley

Motors Corp., with assets of \$4,406 million, to Continental Can Co., with assets of \$257 million. Hurley's figures for 1950 show:

- Depreciation charged to costs was 1.7% of sales, while the 50 producers charged off 2.3%.

- Income before taxes was 10% of sales. The 50 companies averaged 16.1%.

- Income after taxes was 5.4% of

Better Times?

On January 8 the Renegotiation Board explained Part 1460 of its proposed regulations by declaring that contractors who sell at lower prices and produce at lower costs through good management, including methods of production, close control of expenditures, and careful purchasing will be more favorably treated in contract renegotiation than firms which do not.

On February 18 the Office of Price Stabilization established a 10% return on a firm's net worth (before taxes) as a guide to determining whether a petition for price hikes should be approved. The aircraft industry's return on its investment now is about 6%.

sales. The other firms averaged 8.2%. In 1951 C-W expects to net only 4%.

- Return on invested capital was 6%. The 50 companies averaged 15.8%.

- Number of stockholders was 85,633, more than 20,000 over the average of 63,551 for the other firms. As a matter of fact, C-W had more stockholders than 38 of the 50 firms.

- Average pay per worker was \$4,199, some \$500 more than the \$3,692 paid by the largest manufacturers in the country.

- Profit after taxes, per worker, was \$540, less than half the \$1,186 earned by the 50 producers. For last year, C-W's profit will be about \$372.

- Number of workers was 14,868 as against an average of 61,872 for the others. But by 1951, C-W jumped to 23,000, ranking higher than 12 of the 50 firms.

Small Return

Thus, the Curtiss-Wright organization, which has about 86,000 stockholders and \$118 million in invested capital is making a very small return on its investment and a very small percentage of profit, both before and after taxes. Yet the government expects it to expand its production greatly to take care of defense needs, at the same time licensing production of its engines by Buick, Chevrolet, Kaiser-Frazer, and Avco's Lycoming Division.

Hurley claims present profit margins allowed under C-W's military contracts will not permit either his firm

or any other airplane industry manufacturer to:

- Increase the quality of the product.
- Improve performance of the product.
- Provide adequate production capacity.
- Cut manufacturing lead time.
- Speed up deliveries.
- Reduce prices.



Underwood
Odlum

Hurley's arguments are backed up by Consolidated Vultee Aircraft Corp.'s board chairman, Floyd B. Odlum, in the Convair annual report. Odlum declares that any tax law which will leave the stockholders very little in increased

net earnings after the firm has more than doubled its present volume of production is too much of a penalty for efficiency and enterprise.

Pointing out that Convair's military business is on a cost plus fixed fee basis of about 40%, Odlum indicates present tax laws take away 82% of this 4% fee on increased work. Thus only 18% of the small fee or about three-quarters of 1% remains for distribution as dividends.

\$115 per Worker

Putting it another way, Odlum says that for Convair's current fiscal year, net earnings after taxes will amount to less than 1 1/4% of net sales and not more than \$115 per worker. Any increase in labor cost of as little as 8%, he avers, will leave Convair without any earnings if such pay hikes could not be recovered by its defense contracts. Moreover, while the current year's net will be \$115 for every worker (or about nine days of payroll), Convair's total taxes will amount to \$315 per worker.

One factor complicating the tax situation as far as the aircraft industry is concerned is the government's policy toward both the suppliers and customers of airplane and engine producers. Seven major plane suppliers, including Aluminum Co. of America, Reynolds Metals, Bethlehem Steel, International Nickel, U. S. Steel, Thompson Products, and Bendix Aviation in 1950 averaged an 8.4% profit after taxes as a percent of sales, a 13.8% return on their invested capital, and a 3.9% depreciation in costs as a percent of sales. Six major aircraft industry customers, including American, Eastern, United, Pan American, Trans World and Western Airlines,

fared almost as well that same year. They averaged a 5.7% profit on sales after taxes, a 13.3% return on their invested capital, and a 10.1% depreciation in costs as a percent of revenue.

Inconsistency of government policy on taxes is further evidenced by the Civil Aeronautics Board's program of permitting an 8% return *after income taxes* for airlines in establishing mail rates. As recently as November 15, in establishing mail rates for Chicago and Southern Air Lines, the Board stated:

"The allowance reflects the higher income tax rates established by the Revenue Act of 1951 and recognizes interest expenses as a deduction for income tax purposes."

Special treatment for certain industries is not a new concept and any such policy adopted with respect to the aircraft industry would simply be a continuation of the government's program to better its own interests. Thus, for example, the Internal Revenue Act of 1926 encouraged the mining groups by granting them specific tax exemptions and now a statutory depletion equalling up to 27 1/2% of gross income (but not more than 50% of their net) is permitted for tax purposes. These benefits are used by aluminum and oil producers to improve their earnings and are justified by the government on grounds that the products are vital to the national security.

Does the aircraft industry, which is at least equally vital, rate less consideration?

CAB Starts Investigation Of Lake Central Airlines

Investigation to determine whether Lake Central Airlines' management has been "honest, economical and efficient" has been started by CAB, and renewal of the local service line's certificate has been held up pending the outcome.

It was the first such action taken by the Board since the Colonial Airlines' investigation last April, and named four top officials of the company "who may have violated" provisions of the Civil Aeronautics Act.

They were John V. Weesner, director and executive vice president; R. Paul Weesner, former director and executive vice president (recently named president of Resort Airlines); R. W. Clifford, vice president; and Roscoe Weesner, director.

A "routine audit" brought to light the possible violations, CAB said, adding that it then undertook a more detailed inquiry into the matters revealed by the audit. No date has been set for hearing.

EAL Sells 20 DC-3's, Four Leased by TWA

Two of the largest operators of DC-3's, TWA and Eastern Air Lines, are proceeding with plans to dispose of their Douglas equipment as they receive more of the Super Constellations and Martin 4-0-4's on order.

EAL has already sold 20 of its DC-3's to an undisclosed buyer, leaving it with a total of 29. It is understood that the buyer will make the formal announcement of the transaction. EAL does not contemplate any additional sales in the immediate future because of operational needs.

TWA has leased two of its DC-3's to Northeast Airlines and two to Wisconsin Central, but won't sell any until deliveries of new equipment are well underway. The company has 55 DC-3's including the four on lease.

Budget Cut Threatens CAA Airport Unit

One of CAA's most useful services, the airport management service of the airport division, will be eliminated June 30 if the present budget is approved by Congress.

The management group, established since the war to advise municipalities on better operating methods, consists of one man and a secretary in each region. Its objective has been to put airports on a self-sufficient or profitable basis.

About 15 persons will be affected if the budget cut is sustained. The cut was made in the Commerce Dept. before the budget ever reached the Bureau of the Budget.

\$1.4 Million Asked for Jet Transport Testing

Congress has been asked for \$1,400,000 for testing of commercial jet transport aircraft by the CAA.

The request, contained in the President's Supplemental Appropriations bill, stresses that the money will be used for testing designed to qualify CAA and CAB to establish proper certification and operations rules for commercial type jets.

Planes to be tested will include the Avro Jetliner, two Douglas F3D night fighters, and two North American B-45's. The program has unanimous industry backing.

\$10.5 Million Net for AA

A 1951 net profit of \$10,548,000 was reported by American Airlines after provision for \$17.4 million in taxes. Record revenues totaled \$162,970,000.

Effects of Newark Shut-Down Spreading

Doolittle heads Presidential commission to investigate all close-to-city airports; report due in 90 days.

WITH the appointment of a three-man Presidential commission, the problem of airports located near densely-populated areas took on a national aspect.

Although much furor had been raised in Congress and elsewhere after the third accident in Elizabeth, N. J., in two months, attention basically remained focused on the Newark-New York situation and shut-down of Newark Airport until President Truman asked Lt. Gen. James H. Doolittle to head the new commission.



Rickenbacker

Named to serve with the Shell Oil vice president were CAA Administrator Charles F. Horne and Chairman Jerome C. Hunsaker of the National Advisory Committee for Aeronautics. Executive secretary will be S. Paul Johnston, director of the Institute of the Aeronautical Sciences and the Defense Department's Aeronautics Committee.

Propose Legislation

They will report within 90 days on their survey of methods for relieving congestion at airports near large cities and have been ordered to include proposed legislation and appropriations required to carry out any program they suggest. Their survey will include studies of existing and proposed civil and military airports all across the country.

In creating the commission President Truman said he was aware of the fact that many major airports were built years ago when air operations were comparatively limited. He indicated, however, that concern over the loss of life and the anxiety in some cities over recent crashes made the group's creation advisable.

In the New York area, meanwhile, the shutdown of Newark caused other nearby fields to bear the brunt of the added traffic. LaGuardia Field, for example, quickly shot up to 680 flights a day, reaching a peak of one landing or take-off every 30 seconds.

This situation prompted residents of the Flushing, L. I., area to object, and a 19-member National Air Transport Coordinating Committee, headed

by Eastern Air Lines' president Edward V. Rickenbacker, came up with a program designed to reduce LaGuardia's daily flights to 454 by Mar. 1 (see box). In other developments:

• **CAA, the Air Line Pilots Association**, and all organized transport groups notified America's 500,000 licensed pilots to use preferential runway patterns which would keep planes away from congested areas during landing or take-off where possible. Such a plan is already in effect at both Idlewild and LaGuardia.

• **After CAB's preliminary investigation** of the National Airlines DC-6 crash showed that failure of number four engine and inadvertent reversing of the number three engine propeller were responsible, CAA ordered all op-

Cuts At LaGuardia

Here's how the Rickenbacker committee reduced LaGuardia Field's daily flights from 680 to 454:

Transfer to Idlewild of 30 daily airline flights to Canada and Bermuda. Lines affected are Colonial, Trans-Canada, American, and Pan American.

Transfer of about 50 private and executive flights to Westchester County and other nearby fields.

Elimination or transfer of 10 military flights.

Consolidation, cancellation or transfer of 128 scheduled domestic flights. Some moved to Idlewild, Philadelphia, and Bridgeport, Conn.

Agreement by non-scheduled airlines not to bring any new flights (which formerly used Newark) to LaGuardia.

erators of Douglas DC-6 and Convair 240 equipment to change over from conduit to open wiring on the reversing circuit to permit easy inspection.

• **United Aircraft Corp.'s Hamilton Standard Division** pointed out, however, that there was no indication in the CAB probe that the propellers themselves were defective. Ham-Stan said reversible pitch props have been widely used as a safety measure for military and commercial planes for the last five years and that they have been endorsed by both ALPA and the Flight Safety Foundation.

• **Rep. Carl Hinshaw** (R., Calif.) urged the CAB to "give careful consideration" to whether the Curtiss-Wright C-46, which is "critical" at present flying weights if one engine should fail during landing or take-off, should be permitted to operate into airports near urban areas.

• **Aircoach Transport Association** proposed that a C-46 with a modified propeller be flown at 48,000 pounds in a demonstration at Baltimore. Designed to prove CAB's recent reduction of the Commando's operating weight to 45,000 pounds has "nothing to do with safety," the plane would feather one engine at the most critical point of ascent and climb on the other.

• **Five airports** put in bids to take over the 128 flights shunted away from LaGuardia. They included Philadelphia, Baltimore, Westchester County, Bridgeport, Conn., and Millville, N. J. Lakewood, N. J., meanwhile, also proposed its landing facilities be considered until Newark's fate is ultimately decided.

• **The USAF's Transportation Control Depot** urged the Pentagon to push for a reopening of Newark Airport for landings by single-engine jet fighters destined for shipment to Europe. No action was taken on this request and the Depot transferred its operations to Floyd Bennett Naval Air Station.



James H. Doolittle

Charles F. Horne

Jerome C. Hunsaker

Three-man airport committee named.



SPECIAL WORKING GROUPS have been established within the newly formed National Aviation Noise Reduction Committee, shown above, to study each phase of the noise problem and report back to the main committee on their findings. The Committee, sponsored by CAA, includes, seated left to right around the table: Brig. Gen. Robert B. Landry, air aide to the President; Rear Admiral C. F. Coe, U. S. Navy; Amos E. Heacock, president, Aircoach Transport Association; Captain R. G. Armstrong, U. S. Navy; Frederick S. Lee, deputy administrator, Civil Aeronautics Administration; Charles F. Horne, CAA administrator; Albert J. Forte, assistant to the administrator, CAA; Admiral

Emory S. Land, president, Air Transport Association; Harry R. Betters, U. S. Conference of Mayors; Captain Arthur F. Foster, Airline Pilots Association; Cyril C. Thompson, exec. secretary, Airport Operators Council.

In the background, left to right, are: seated, H. B. Johnston, Aircoach Transport Association; John A. Belding, president, Continental Charters; standing, Edward C. Sweeny, Senate Committee on Interstate and Foreign Commerce; Colonel C. V. Burnett, director, Detroit Aviation Commission; J. B. Hartranft, Jr., general manager, Aircraft Owners and Pilots Association; V. G. Mellquist, Aircraft Industries Association.

Atlantic Coach Bookings Heavy, But April Suffers

Lots of business is on the books for international airlines starting Atlantic tourist flights May 1, but officials are wondering whether they'll be carrying many passengers in April.

Passengers who can postpone trips from April to May are expected to do so to take advantage of the cheaper rate. Until Mar. 30, off-season fare of \$525.40 round-trip New York-London prevails, or \$39.40 over the \$486 May 1 tourist fare. However, cheapest April rate will be \$618.20.

Thus, a passenger can save \$132.20 by postponing his trip until May. General opinion is that an off-season rate should have been extended to Apr. 30 to narrow this price gap.

Although some lines say April business is holding up fairly well, they admit that many reservations have been lost because of tourist service. In addition, when tourist fare becomes effective, all carriers expect diversion from regular schedules.

Pan American World Airways has changed original plans and will start with seven DC-6B flights weekly instead of four, increasing to 12 on June 1. Company states it has reservations for slightly more than half of tourist seats available in May, June and July.

TWA flights are 78% to 100% booked through July. Reservations for standard April trips are up over same 1951 period. Sleepers are sold out through July. Total reservations, regular and coach, are 180% over last year.

BOAC says inquiries have been heavy, with first tourist flights sold out and over 100 on the waiting list.

Scandinavian Airlines System bookings for the coming months are 300% ahead of a year ago.

EAL Mechanics Get First Union Shop

What is believed to be the first complete union shop agreement on a domestic airline has been signed by Eastern Air Lines and the International Association of Machinists-AFL.

Agreement, covering 2,900 workers in the six bargaining units, provides that all employees now in these units or hired in the future must join IAM within 60 days and must remain members as long as the contract is in force.

The new pact also provides: 2c across-the-board pay hike retroactive to Oct. 1, additional 2c per hr. boost beginning July 1, automatic progression of 6c per hr. every six months until maximum pay is reached, and night shift differentials of 7-12c per hr.

A Pilot Looks Favorably at Martin's 4-0-4

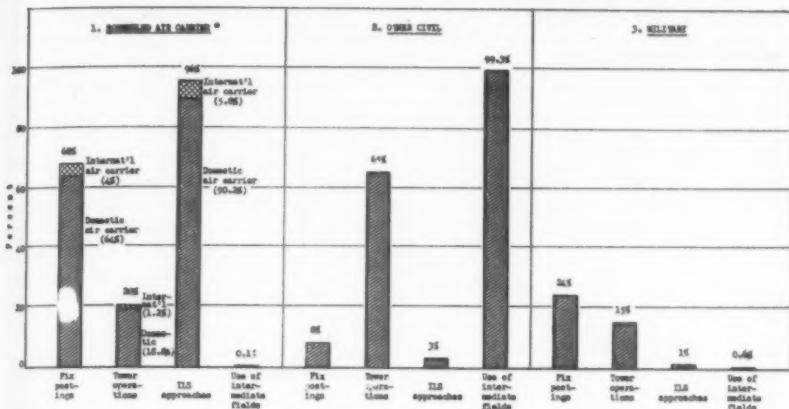
The Martin 4-0-4 should be one of the "finest medium transports for some time to come," according to Bart Hewitt, TWA pilot, and a member of the Air Line Pilots Association's Committee on General Evaluation of the 4-0-4.

Writing in the current issue of the *Air Line Pilot*, Hewitt said: "The Martin 4-0-4 is not another 2-0-2, nor is it a blown-up version of the 2-0-2... The 4-0-4 is a new airplane. It uses many of the same component parts such as engines, props, etc., but make no mistake about its not being a new airplane.

"It is new structurally, and the various systems such as electrical, hydraulic, heating and pressurizing are entirely different from those of the ... 2-0-2A."

He added that the 4-0-4 "flies better than the 2-0-2 and the pilot has more to work with to get his job done efficiently. The single-engine performance of the ship at high gross loads is excellent and the built-in safety features in the general aerodynamic design should make it one of the finest medium transports for some time to come."

How Airways' Use was Divided in Fiscal 1949



How Should Users Pay for Airways?

Legislation for airways charges expected to be introduced this year, but passage unlikely.

By WILLIAM D. PERREAULT

LEGISLATION calling for user charges for the Federal airways is expected to be introduced during this session of Congress. The Federal airways cost the U. S. Government approximately \$80 million per year, more than half of which is accounted for by maintenance and operation costs. Using the most lenient method of user charges under consideration, the domestic airlines and other civil transport operators would be charged more than \$10 million per year as their immediate share of these costs. Charges would be increased as the industry's ability to pay improved.

The President called for Federal airway user charges in his budget message to Congress in January. The same request has been in past budget messages and has been urged by the Bureau of the Budget and Congressional Appropriations Committees since 1945.

Telltale Signs

The signs which point toward legislation during this session of Congress include:

* CAA's staff study of user charges for the Federal airways, conducted at the request of the Bureau of Budget, recommended that these charges be put into effect by 1953.

* The airlines made an estimated \$50 million in 1951. The poor financial condition of the airlines, which would have meant user charges could only have been met by granting the airlines higher mail pay, has been the major obstacle to earlier application of user charges.

* The next strongest objection to Federal airways charges, the absence of user charges for Federally provided highway and waterway services, is well on the way to correction. Congressional studies and legislation affecting both of these groups are now underway.

* Industry resistance to user charges has virtually disappeared. The airline industry is now more concerned about the establishment of an equitable means of computing and applying these charges. Associations representing highway, waterway and railroad users are expected to fall in line with similar policies in the immediate future.

The Air Transport Association, representing the scheduled airlines, has a user-charge study underway. This six-month study is headed by Rutgers University transportation professor Reginald V. Hubah. A preliminary report of this group will be issued before completion of the study.

Despite this stepped up activity, and acknowledgment that user charges are equitable, there is little likelihood that applicable legislation will be passed by Congress this year. Only if Federal airway user charges are separated from the allied charges in other segments of the transportation industry are they likely to pass the Congressional test.

Both the Civil Aeronautics Administration and the industry will fight attempts at separation. The aviation industry is the youngest of the transport services. It is willing to go along with a national policy to charge for Federally provided services but will fight the "singling out" of aviation. If all phases of transportation are considered to-

gether, powerful waterway and highway lobbies on Capitol hill will certainly defeat early legislation attempts.

Payment of user charges has tremendous significance beyond the apparent economic cost:

* If the user pays, the user must have a bigger hand in dictating the type and quantity of equipment installed and some accounting for the manner in which the funds are spent. This is of prime importance.

* The users, and particularly the airlines, must establish economic rules which will determine the wisdom of installing every item of equipment.

Will a GCA installation at Little Rock pay for itself? GCA installations cost about \$325,000 to install. How many flights per year are now cancelled or delayed at Little Rock which might otherwise be completed on time if radar were available? The equipment must be amortized in about 15 years. Besides this, it costs over \$100,000 per year to operate a GCA installation.

Such rules might sharply reduce the number of electronic and visual aids installed. This raises the question of the cities' interest in the regularity of airline service. Many cities which do not generate enough traffic to meet the economic demands of the airlines, required to meet the above test, might feel they want the type service which demands these aids. Congressional pressure dictates some installations. These should present interesting situations.

Paramount Problem

For the moment the method of computing and applying airway user charges is the paramount problem. CAA recommended that this be done by a 1½ cent tax, over the present 1½ cent Federal excise tax, to be charged for aviation fuel of over 90 octane. This would eliminate charges to private plane operators. Initially, during the first few years in which experience with user charges is being accumulated, and while the International Civil Aviation Organization worked on this same problem, charges would only be made for domestic users and services.

A gas tax is convenient because it can be collected at the refinery, making it administratively simple. Gas consumption is a relatively good indication of airway utilization and benefits by airline users. This may not be true of industrial users of transport aircraft. Both the Bureau of Budget and Treasury Department are against a fuel tax to pay user charges.

There are five other prominent methods which could be used:

* A graduated aircraft registration fee—this will probably be used for non-air carrier aircraft, even if the fuel tax

Facilities Maintained and Operated by the Office of Federal Airways

(As of December 31, 1951)

Civil Airways	
Controlled Civil Airways, Mileage	74,424
Non-controlled Civil Airways, Mileage	3,972
Oceanic Routes, Mileage	15,412
Landing Areas	
Intermediate Fields	89
Jointly Operated Fields	47
Lighting Aids	
Airways Beacons (excluding those at landing areas)	917
Neon Approach Light Lanes	77
High Intensity Approach Light Lanes	28
Navigation and Landing Aids	
Airport Surveillance Radar	10
Fan Markers	283
Distance Measuring Equipment	14*
High Power Non-directional Radio Beacons	3
Instrument Landing Systems	97
Low/Medium Frequency Ranges	375
Low/Medium Power Non-directional Radio Beacons	149
Precision Approach Radar	10
VHF Omnidranges	351
VHF Visual Aural Ranges	34
Communications Facilities	
INSACS	427
OFACS	15
Traffic Control Facilities	
Air Route Traffic Control Centers (Mechanical Interlocks)	31
Airport Traffic Control Towers	157
Combined Tower/Stations	19
Teletype and Interphone Services	
Weather Reporting Circuits	79,510
Teletype Mileage, A, C & O	913
Teletype Drops, A, C & O	
Traffic Control Circuits	
Teletype Mileage—B	34,321
Teletype Drops—B	518
Interphone Mileage—F	64,450
Interphone Drops—F	3,294

* Operating on test

Prepared by Program Engineering Branch, CAA

is accepted for airlines.

• **A gross revenue tax**—this is applicable only to airlines and shows some promise as a partial solution.

• **Transportation tax**—this is highly unlikely because a transportation tax already exists and would be applied where it hurts the most—directly on the passenger. It would be particularly bad if aviation user charges precede those of water and highway facilities.

• **Tax on revenue miles flown**—this type tax, probably scaled with different rates for each type aircraft, is another of the more promising methods.

Unlikely Method

• **Reduction in rates** for Federal traffic, both cargo and passengers—it was a 10% reduction of this type that paid off most of the railroad land grants. It is unlikely for the airlines because they already offer 10% off for military personnel, the great bulk of all government traffic.

In a precedent-setting report the President's Water Resources Policy Commission proposed that user charges should include cost of operation and maintenance, depreciation, and interest

on the unamortized investment. This has also been proposed in CAA's report, "A Program of User Charges for the Federal Airways System." The latter report, last revised in Feb., 1950, is still the basic document governing Government policy on airways user charges and is still administratively restricted.

What are the "Federal airways?" Officially they have been termed "a ten-mile-wide strip between cities provided with intermediate landing fields, navigation and air traffic-control equipment." Indirectly they include the services of the U. S. Weather Bureau. Principal components of the Federal airways are shown in the accompanying chart. They include landing aids (visual and electronic), control towers, radio ranges, and communications facilities.

The airways are growing by leaps and bounds. Costs are keeping abreast of growth. In 1925 there were less than 4,000 miles of airways and total annual cost was only around \$800,000. By 1940 the airways had grown to 28,745 miles with annual costs of almost \$14 million. Post-war expansion has seen this grow to almost 75,000 miles of airways in

1951 and annual cost of \$80 million.

The changing nature of the airways, dictated by technological advances, keeps replacement constant and depreciation charges high. Depreciation figures are based on useful lives of 12-30 years, depending on the item. An average depreciation period is about 15 years. This is a transient condition, dictated primarily by the planned replacement program outlined in the Radio Technical Committee for Aeronautics' SC-31 report on development of a common system of air navigation and traffic control.

It is difficult to establish an accurate gauge of airway utilization; the last comprehensive attempt was made by the CAA in its user-charge report. This tabulation, based on 1949 records, showed the scheduled airlines were responsible for 68% of communications-station activities, 96% of the instrument-landing-system approaches, and 20% of the air traffic control towers' activity.

En Route Areas

The preponderance of airline use of facilities also exists in the en route area where similar studies showed 68% of the fix postings to be by the scheduled carriers, 9% of the modified fix postings (including some message functions), and only 0.1% of the intermediate landing field activities.

These figures show drastic changes in times of military operation. For example, 65% of CAA traffic control tower activities in 1944 were for the military services, while in 1949 these were down to 15%. By 1952 the ratio of military operations was again on the increase.

Averaging out the relative use of the many government-operated facilities, CAA attributed 43.6% of 1949's usage to the scheduled airlines, 26.7% to other civil, 27.2% to the military, and the remaining 2.5% to the international air-lines.

A 1½ cent per gallon fuel tax on 1951's 701,310,000-gallon scheduled airline consumption would hardly begin to pay the \$90 million annual investment in airways. Actually the Bureau of Budget expressed dissatisfaction with the amount of recovery that might be expected under this program. Regardless, initial airway user charges can not be expected to be much more severe than this.

The aviation industry is an "infant industry." Someday it may be expected to carry the full economic burden of Federally provided facilities. Meanwhile user charges would be more of a token payment, an indication that the industry is willing to pay its own way to the greatest extent possible without harmful effects on its economic health.

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TION



DEAD WEIGHT exemplified: a Pratt & Whitney R-4360 engine being loaded aboard a Douglas C-124. The engine weighs 3,505 pounds, but its container weighs almost as much—2,500 pounds. MATS hopes to cut this tare weight by shipping engines in open or lightly covered dollies.

MATS' Aim: Less Packaging, More Cargo

Believes two-thirds cut in package weight possible;
teams up with other carriers, industry, to try it.

HOW MUCH dead weight does a cargo airplane haul in its hold?

Plenty, say traffic officials of Military Air Transport Service, and what's more they plan to do something about it, in conjunction with the Air Cargo Task Committee of the National Security Industrial Association, which has appointed a special subcommittee to study the problems connected with excess packaging weight and try to come up with some solutions.

Korean Spur

Cargo carriers, both civilian and military, have been aware for some time of the fact that they are losing a lot of valuable payload because of heavy packaging, but until recently there was no concerted effort to cut down the weight of the packaging. The war in Korea, which has highlighted a number of aviation developments like the utility of the helicopter, Army aviation, and air evacuation of wounded, also proved to be a spur for a drive against "tare" weight—the dead weight of the packaging material used in shipping a piece of equipment.

Now, military and civil carriers, the packaging industry, and other allied industries have banded together in a determined war on tare weight. They are convinced that tare economies can be effected which will mean greater utilization

of military cargo planes and greater profits for commercial cargo carriers.

MATS, which is spearheading the tare war, decided to find out just how much dead weight its planes were hauling around, and accordingly ran a survey of packaging weight at some of its aerial ports. The results surprised even those with long experience in package handling. They found that:

- Weight of the packaging alone, in some cases, was 75% of the total weight of the piece of equipment shipped.

- Average tare weight runs between 30 and 45%.

- MATS officials believe that it can be trimmed to about 15%.

Just how important that would be to cargo carriers is best illustrated by a specific case. Take a Douglas C-54 which is hauling a 15,000 pound "payload" and assume that the tare weight is 40%. That means that the C-54 is hauling 6,000 pounds of packaging weight which is of no use whatever to the recipient of the shipment. If the tare weight could be cut to 15%, the C-54 would still be hauling 2,250 pounds of dead weight, but the *actual payload* of the same plane would go up from 9,000 pounds to 12,750 pounds—an increase of more than 40%. Ask any cargo carrier what that would amount to in the course of a year's operations.

The allies in the tare war have two major objectives designed to achieve this cut to 15% tare. First, they plan a large scale "tare education" program to help cut the dead weight at the source. Second, they hope to find new methods of lightweight packaging.

The education program is important. Shippers of supplies and equipment, air traffic experts feel, pay little attention to the weight of packaging. Their first consideration is to get the particular piece of equipment to the consignee in good condition, so they bundle it in heavy and bulky packaging designed to protect it from damage in transit.

Labels To Be Used

Protection from damage is important, MATS agrees, but it is felt that the maximum degree of safety can be attained with considerably less packaging than some shippers now use. MATS has already taken one step to encourage shippers to cut down on tare weight: parts and equipment shippers have been directed to stick a label on shipments certifying that the package has been prepared with air shipping in mind. This, MATS traffic officials think, will encourage the shipper (who is the manufacturer of the piece of equipment in most cases) to cut the tare weight to a minimum. The next step is wide dissemination of information about excess weight to shippers, who will be urged to cut packaging weight to a minimum consistent with adequate damage protection.

A number of directives pertaining to packaging will have to be revised, too. For instance, at one MATS terminal, a small, two-inch elbow which weighed practically nothing turned up in a wooden box of one-foot-cubed dimensions. The reason: a directive states that any piece of equipment to be shipped overseas must be not smaller than one foot cubed, because of the impracticality of handling a smaller piece in large shipments which go by surface transportation. Obviously, it is just as impractical to handle the one-foot box for an elbow in an airplane. So directives pertaining to equipment which travels by both surface and air transport will have to be coordinated.

The second objective, devising new, lighter methods of packaging, is more complex than it sounds. It involves more than just substituting one packaging material for another. A number of factors have to be taken into consideration: the abuse the package will take in ground handling, the wear and tear it will get from various methods of tie-down in the plane, the "crush" it will get from other packages piled on top of it, and weatherproofing of the ma-

terial if it is to be stored outdoors in areas where there is inadequate warehousing (Korea, for instance). This problem will be left to packaging engineers, who are already at work on it.

A major step toward the second objective was a meeting of a group of civil and military technicians at MATS' headquarters at Andrews AFB, Camp Springs, Md., last month. Most of the attendees were members of the NSIA Air Cargo Task Committee. They represented civil and military aviation, traffic and transport, and the pulp, paper, packing and canning industries. At the meeting, the problems the carriers encounter in tare weight and the packaging requirements for ground handling, in transit, and storage pertaining to both surface and air transportation were outlined. The purpose of the meeting was not to arrive at solutions at a single sitting, but rather to outline the problem and let the various agencies involved go to work on it.

Clearing House

Members of the Air Cargo Task Committee feel that the group will accomplish quite a bit toward solving the many problems of air cargo handling, including the all-important one of tare weight, by educating each representative in the problems of the others and through exchange of ideas for their solution. The committee fills an important need for a single clearing house for both military and civil ideas and research in the air cargo field.

Meanwhile, MATS is waging a private war on tare weight, while cooperating with the larger group. One step has been to repackaging shipments at aerial ports. Bulky and over-packaged equipment which was freighted initially by surface vessel is torn down and put in lighter containers for air shipment. Obviously, this cannot always be done and is not the final answer to the packaging problem. A priority piece of equipment cannot be delayed for 24 or 48 hours while it is being repackaged. Even overpackaged, it must be permitted to go on, for the tare weight is a secondary consideration to urgency. That is why MATS is eager to educate the shipper, so the tare weight can be eliminated at the source.

MATS is also doing some container research. For instance, MATS carries a tremendous number of engines. They now come in heavy "cans" which usually weigh as much as the engine itself. The cans, of course, were scientifically designed for engine protection through use of a suspension system which absorbs shock. But MATS feels that a simple dolly, without any cover-

ing, can be devised to offer the same protection and is now working on prototypes. For outside storage it is felt that a lightweight plastic can be substituted for the heavy steel now used in the cans.

Big Increase

Never before, MATS officials say, has the problem of tare weight received as much attention as it has in the last few months. And rightly so, for planes are getting larger. If tare reduction can achieve an actual payload increase of 3,750 pounds in a C-54, it will mean an increase of two to three times that in planes like the Boeing C-97 and Douglas C-124.

And that, they think, is more than worth the long research it will take to win the tare war.

MATS to Use Jolt-Measuring Device

A new device which records the jars and jolts a piece of equipment receives in being air-transported will soon go into service with Military Air Transport Service. Known as the Impactograph, the machine is a miniature seismograph with a tape which records graphically the impacts on the package.

The machine also has a timing device, which runs for seven days, which will permit MATS traffic men to determine just at what portion of the trip the jolts were received.

By examination of the tape, MATS can determine the impact stresses on a package during flight, just where the package is getting rough ground handling and where it is not being moved fast enough (a static condition of the tape for a long period will indicate that the package is not being moved).

Small and compact, it can be placed in any medium sized package and ground handlers will not be aware of its presence.

The Impactograph is manufactured by Impactograph Corp., 900 Euclid Ave., Cleveland, O. It has already been tested by American Airlines.

SAS Shops Certificated

CAA has certificated two Scandinavian Airlines System maintenance and overhaul shops for the overhaul of American-built transport planes. SAS' shops at Kastrup, near Copenhagen, Denmark, and Fornebu, near Oslo, Norway, are already doing tank-sealing work under contract with Douglas Aircraft Co.

Watch Leaded Aviation Gasoline, CAA Warns

Users of aviation gasoline have been warned by CAA's Office of Aviation Safety to guard against serious adverse effects on engine operation which may result from use of gas with increased lead content, as ordered last fall, by the Petroleum Administration for Defense.

Since all engines using grades 91/96 and 100/130 fuel are involved, operators of many low and medium-powered engines, as well as airlines, are affected. Conditions warned against specifically were:

Increased deposits from combustion products.

Increased deposits in oil passages and on interior surfaces of the engine.

Increased supercharger and induction system deposits.

Possible occasions when fuel with greatly increased specific lead content is encountered.

Suggestions for avoiding, reducing or minimizing each of these effects have been published by CAA and are available from its Office of Aviation Information, attention Inquiry Branch W-58, Washington 25, D. C.

Chase Orders Braking Device for C-123B's

First fleet order for the Westinghouse Air Brake Company's anti-skid device, known as the Decelostat Controller, has been placed by Chase Aircraft Company, Inc., for the C-123B troop and cargo transport.

The Decelostat prevents brakes from being applied until the wheels are on the ground and then adjusts pressure to prevent skids, shorten stop distances, and reduce tire wear.

2 Non-Sked Presidents Among Elizabeth Victims

The presidents of two non-scheduled airlines were among those who lost their lives in the Feb. 11 National Airlines accident at Elizabeth, N. J. Their attorney, Jacob Freed Adelman, who was scheduled to make the flight with them, escaped the accident by taking an earlier plane.

The two executives were Cyril H. Smith, president of Modern Air Transport, Inc., one of the larger of the non-scheduled airlines, and Scott Chalfant, president of Federated Airlines, Inc., also a large irregular carrier.



*From the Birthplace
of Phantom Shapes*

NEW WATER-BASED WEAPONS

Seaplane research is bringing new phantoms to life in Stevens Tech's towing tanks, testing ground for the U. S. Navy Marlin's advanced hull design.



Delicately instrumented models prove today's dreams for tomorrow's air-sea power at the Experimental Towing Tank, Stevens Institute of Technology.

AN instrument-covered seaplane model knifes through the waters of a Stevens Tech towing tank. A Naval Bureau of Aeronautics researcher pores over plans for a jet-powered, swept-wing flying boat. A Martin engineer makes dreams take wings on his drawing board. And, step by step, planes that combine water-based mobility with land-based speed come closer to reality!

Latest product of seaplane research teamwork, today's advanced Martin P5M-1 Marlins add new sinews to our Navy's anti-submarine forces. Their performance is in the tradition of the history-making Martin seaplane flight to Catalina in 1912, the famous Martin China Clipper, the dramatic rescues of Mariner patrol planes and the record-load-carrying Mars flying boats of World War II.

Today's seaplane research promises to make their jet-powered successors tomorrow even more potent weapons in America's arsenal! THE GLENN L. MARTIN COMPANY, Baltimore 3, Maryland.

Martin
AIRCRAFT

Builders of Dependable Aircraft Since 1909

DEVELOPERS AND MANUFACTURERS OF: Navy P5M-1 Marlin seaplanes • Air Force B-57A Canberra night intruder bombers • Air Force B-61 Matador pilotless bombers • Navy P4M-1 Mercator patrol planes • Navy KDM-1 Plover target drones • Navy Viking high-altitude research rockets • Air Force XB-51 developmental tactical bomber • Martin airliners • Guided missiles • Electronic fire control & radar systems • **LEADERS IN** Building Air Power to Guard the Peace, Air Transport to Serve It.

Interview

with

PER A. NORLIN

President, Scandinavian Airlines System



A Look Ahead at Scandinavian Airlines



About Per Norlin . . .

PER NORLIN has been connected with the development of commercial aviation in Scandinavia for 29 of his 47 years, and was one of the principal driving forces behind the formation of Scandinavian Airlines System, which he now heads.

Born in Stockholm in 1905, Norlin's first connection with aviation came in 1923 when he obtained a temporary job as an assistant at the International Aviation Exposition at Gothenburg. It was then that he met Carl Florman, the dean of aviation executives in Scandinavia.

Shortly thereafter, he found a regular job with ABA (Swedish Airlines), and in 1925 was named as the company's representative in Amsterdam. In 1927, for a short time, KLM Royal Dutch Airlines took over ABA's passenger service, and Norlin was returned to Stockholm "temporarily." However, he remained there as executive assistant to Florman, then president of ABA.

It was during the International Mail Service conferences in 1939 and 1940 that Norlin envisioned the possibilities of a Scandinavian airline to North America, but his plans were delayed by World War II.

However, by 1943 he helped form Swedish Intercontinental Airlines (SILA), the forerunner of Scandinavian Airlines System. While serving as its president, he continued to work toward his ultimate goal, and achieved it in 1946 when the Scandinavian Airlines consortium agreement was signed.

As a further step up the ladder, he was elected president of ABA in 1949, and two years later was named to head SAS. The company has now grown to the point where it serves 67 cities in 35 countries, has 50,000 unduplicated route miles, and employs 6,600 people.

Known and respected as one of the leaders in international aviation, Norlin is also a member of the executive committee of the International Air Transport Association.

Q. The opinion has been expressed in the U. S. that higher unit costs and levelling off of increases in productivity per employee might lead to higher airline fares. What is the situation among international operators?

A. During the last two or three years, at each rate conference SAS has pressed for higher fares and we feel very glad, I must say, that now, apparently, many other companies are coming to the same conclusion. Now that our costs are going up, an increase of our rates seems unavoidable.

Q. Does SAS receive a subsidy from the three Scandinavian countries?

A. We receive no subsidy for international traffic. We get a small subsidy for our domestic traffic inside Sweden, Denmark and Norway. We get about \$100,000 in Sweden, about \$300,000 in Norway and \$20,000 to \$30,000 in Denmark.

Q. How are you paid for carrying mail on international routes?

A. According to an agreement between the Universal Postal Union and IATA we are paid for European traffic at the rate of 3 gold francs per ton-kilo and on international long-distance flights we get 5.5 gold francs; this will be reduced to 5 francs from next April 1st.

Q. SAS took a strong position against the establishment of coach fares in the international field at this time. Now that these fares are a fact, what effect do you feel they will have on your operation, economically, operationally and passenger-wise?

A. I wish to state first that SAS has not been against the introduction of coach fares. Our objection has been that the coach fare has been introduced before all carriers had suitable equipment for coach traffic available. Presently I believe that coach traffic, if it is going to be a success, as we all hope it will be, has to be flown with modern pressurized 4-engined planes. As coach traffic will now be introduced from May 1 this year, our intention is to do our best in spite of delayed aircraft deliveries.

We have converted a number of DC-6 planes to 60 seats and until our new fleet of DC-6B's is delivered, DC-6's will be used for coach traffic over the Atlantic. As we expect a considerable diversion from standard class to coach, and from the North Atlantic point of view Europe does not offer much of a new market from the introduction of coach fares, we are afraid that the additional number of people who must be transported to make the project economical will be difficult to find in Europe and expect that we shall more and more have to rely on the U. S. market for additional passengers.

SAS will put as many coach planes across the Atlantic as demand shows and after delivery of our new DC-6B fleet we will exclusively fly air coach passengers in that type of aircraft.

Q. It is generally acknowledged in this country that the DC-3 is no longer an economical aircraft. Does SAS have plans to replace these planes in the foreseeable future?

A. SAS has at present 21 DC-3 aircraft in service. The Swedish-built twin-engined Scandia plane, for all practical purposes and traffic conditions in Scandinavia, is the best replacement we have for the DC-3. However, the Saab factory in Sweden, which builds the Scandia, is at present overloaded with work for the Swedish Air Force and delivery of more Scandia planes for SAS does not seem likely.

'... the DC-3 ... will be used for a considerable time'

Modern twin-engined planes now being built in the U. S. are too big for our airports, especially in northern Scandinavia. SAS will, therefore, for the time being, utilize its Scandia and DC-3 fleet and we feel that the DC-3, in spite of what has been said about it, will be used for a considerable time in many parts of the world.

Q. Is the so-called dollar shortage a serious matter in SAS's choice of aircraft?

A. The dollar shortage is no doubt a very difficult problem. However, SAS must always buy the very best equipment for its line wherever it is possible. If there were equally good airplanes available both in the U. S. and soft currency countries, we would buy these planes from the soft currency countries.

Q. Do you feel that there are—temporarily—no aircraft equivalent to U. S.-built planes available today in the world?

A. Up to now we have ordered our planes in the U. S. and I think that is the answer to that question.

Q. Both Stockholm and Copenhagen appear to have maintenance facilities capable of handling complete SAS needs. Has there been any effort between the SAS companies to establish a more economical method of allocating employment and parallel benefits without providing multiple maintenance bases?

A. At the time of the amalgamation of the three old Scandinavian airlines into Scandinavian Airlines System we got an excessive capacity in our workshops. Today all DC-6 equipment is maintained in Stockholm, all DC-4's in Copenhagen, and all DC-3's and Scandias in Oslo. To utilize the present excess of capacity, especially in our workshops in Copenhagen (which by the way is CAA licensed and is one of the most modern workshops in Europe) we are doing repairs for foreign airlines and other foreign customers. Today about 20% of the work in our shops in Copenhagen is done for foreign airlines and foreign customers. This work seems to increase very rapidly.

Divided Registration

Q. It is my understanding that all SAS aircraft are registered among the three countries in proportion to the capital investment, with two in Sweden for every one in Norway and Denmark. Is there any likelihood that this ratio will change during the course of time?

A. As you know, SAS capital, as well as profit and loss, has been split up in proportion of 2/7 for Denmark, 2/7 for Norway and 3/7 for Sweden. SAS planes are registered in the three countries according to the same formula. This formula has been agreed upon for a period of 25 years and there will be no change during that period.

Q. In Stockholm, SAS uses an incentive bonus system for maintenance workers which is reported as obtaining major results. Norway and Denmark are not using it and apparently show little inclination to use such a system. What is the logic behind this apparent discrepancy?

A. Introduction of the bonus system to our maintenance workers in SAS shops in Stockholm has proven to be most valuable and economical. This system was earlier introduced in British European Airways' shops in London and our engineers as well as our workers received very valuable assistance from BEA in introducing a similar system in Stockholm. However, to introduce such a system takes very thorough preparation and an elapsed time of one to two years. The bonus system is now being studied by SAS shops

in Copenhagen and Oslo but, as I mentioned before, there must be some elapsed time before such a system can be successfully introduced. It will thus take some time before the shops in Copenhagen and Oslo will have it in force.

Spares Flown from U. S.

Q. It has been said that the generally high spare parts inventory required in European countries to insure against long and uncertain delivery times is a major factor which may influence future aircraft purchases. What is the nature of SAS inventory and is it considered critical?

A. It is right that spare parts inventory is a much bigger problem in Europe than in the U. S. Before we can get in our order to the factories in the U. S. we have to receive approval from our own currency authorities, bearing in mind that we are endeavouring to save dollar currency, and our requests for spare parts are kept to a minimum. Then our orders are again checked thoroughly by the authorities in the U. S. Thus there is an elapsed time for spare parts to be received in Europe which is much longer than in the U. S. This certainly does not allow any unnecessary stockpiling of our parts. Furthermore, because of the longer delivery time our parts must practically all be transported by air, which increases their cost considerably. Consequently, the greater amount of our parts are being flown the whole way from the west coast of the U. S. to Scandinavia; however, when parts can be bought under normal conditions again I feel that the parts question will be of minor importance and will not influence the purchase of aircraft.

Q. We understand that SAS has at least five different crew member unions with which it has to deal. Does this present much of a problem or is it possible to arrive at one convenient contract?

A. At the time of the amalgamation of SAS there existed five different crew unions—one Danish, one Norwegian, one Swedish, one Scandinavian and one for foreign airline pilots employed by SAS. This naturally created considerable difficulties, and I feel that both the unions and SAS would benefit if we could get all these five unions into one. However, we are facing the same seniority problems as are encountered by American companies who have been merging. It will take some time before we can go further on this point.

Q. Are Scandinavia's expanding Air Forces cutting into the ranks of your pilots and other personnel and if so, to what extent?

A. SAS gets most of its pilots from the respective Air Forces. At present the Air Forces are increasing the number of pilots and SAS has incurred considerable difficulty in getting pilots for its services. Last year 110 pilots were employed and we expect to employ considerably more pilots this year. We have received a very high degree of cooperation from the respective Air Forces.

Q. Will British European Airways' turbo-prop powered Vickers Viscount offer direct competition with SAS on any of its routes? How do you look at this competition?

A. I don't know if and when the Vickers Viscount will be put into service by BEA in competition with SAS. We certainly have a very high regard for that airplane but we hope to be able to meet the competition with our own Douglas DC-6B's.

Q. Will BEA's or other airlines' activities in the turbo-prop or turbo-jet field force SAS into this picture at an early date?

'... turbo-prop and jet developments in 1958 or 1960'

A. We in SAS do not believe that we shall face the turbo-prop and jet problem until 1958 or 1960, even if other companies competing with us should introduce the turbo-prop or turbo-jet at an earlier date. We believe up until then we shall be able to compete successfully with our DC-6B's.

We in SAS are of the opinion that we cannot jump from one type of aircraft to another with too short intervals, particularly with the present cost of modern aircraft and power plants. Certainly such aircraft cannot be depreciated in the same short time as automobiles. Also, SAS is not going to buy any aircraft that is not properly proven and we are unwilling to stand the high cost of de-bugging new aircraft.

Q. Have the U. S. manufacturers made much of a sales effort among European carriers for their jet transport proposals?

A. To my knowledge, no.

Not Interested in DC-7

Q. Do you visualize that SAS might modify its order for DC-6B's to change part of this to DC-7's?

A. No. As far as we have been able to examine the DC-7, in this short time, it seems that this plane is especially built for trans-continental service in the U. S. and is not suitable for high-density traffic over the Atlantic. Consequently, we are not at present interested in the DC-7.

Q. What is your attitude on the possibility and wisdom of converting DC-6's and DC-6B's to Wright compound engines?

A. What we could gain by switching to Wright compound engines would not be compensated by the cost, particularly in view of the forthcoming turbo-prop and jet developments in 1958 or 1960.

Q. Lockheed Aircraft Corp. has stated that it intends to have a turbo-prop powered Constellation flying in 1955 and Eastern Air Lines, as well as one other foreign airline, has stated that they intend to be flying these turbo-prop powered Constellations by 1955. Do you feel that they are a little optimistic or otherwise?

A. I do not doubt that we will see turbo-prop powered planes in the air before 1958. I doubt, however, that you will see too many of them in the first few years, or that we will have much experience with them before 1958 or 1960.

Q. The three American airlines, including American Overseas, have in the past carried over half of the total passenger traffic across the Atlantic. Do you believe this trend will change in favor of the foreign carriers as against the two remaining American airlines?

A. We certainly have a fighting spirit and love competition but, even doing our very best, I think we would be very happy if we could keep our present position. I think we will not see any change and if there is any change I think the American operators will get a bigger share than they have now.

Q. What is your attitude to IATA's value to the international airlines?

A. IATA has, in its short lifetime since the war, developed very rapidly into an efficient business organization which is of utmost importance for all international operators.

The Rate Conference of IATA has proved that it has been possible to get the airlines to agree on rules and regulations and conditions under which passengers and cargo are internationally carried. It is natural that when

such rules and regulations are established in a very short time for a world-wide traffic system, many things still remain to be done. I feel that in the beginning in the rate conference there has been inclination perhaps to get too much bureaucracy into our rules and regulations but I know also that those who are responsible are fully aware of that tendency and will do their utmost to simplify our rules and regulations.

Q. Has your company given much consideration to the matter of user charges for the international airways, their justification and possible effect on SAS?

A. This question regarding user charges for international airways is of very great importance and has been and is now under study by IATA. The outcome of these studies and negotiations between IATA and ICAO will be of great importance for all operators. I believe that the governments at present over-estimate the airlines' ability to take over part of these costs. This is a question which must be internationally agreed upon, and I hope that no airline will enter into separate agreements with their own government for them we will face generally different agreements, conditions and systems in which the airlines are more or less forced to take over costs which we should not bear.

No Helicopters for 5 Years

Q. What are SAS's plans regarding helicopter services in Scandinavia?

A. We are studying the helicopter problem with great interest and we feel that it will take another five years before we will have a helicopter of a quality which will give us satisfactory and economical results.

Q. What is your opinion on proposals that have been advanced for a single airline in Europe?

A. The idea behind that plan has been that all European airlines which do not have any intercontinental lines, should join together, but that those who do have intercontinental routes should still go on and do business on their own. We feel that it is not possible to split up our organization in such a way. Further, we feel that economic conditions today are much better than has been shown. This idea to form one company was created because it was felt that by putting all the companies together we would be in a better financial position, which I most definitely do not agree with. We feel that it would be better if the respective operators could get together and see if some money could be saved by standardization of ground organizations and perhaps utilization of each other's stocks of spare parts, but we do not believe that it would be possible to organize one company at this stage with any expectation that it would be a financially good project.

Q. Do you have any problem in getting currency out of any of the countries which you serve?

A. We have currency problems in several countries. Up until now we have been able to solve most of them but we have a few places where it doesn't look too good. Our statistics may show a 60% payload out of a country but all the money is blocked in that country.

Q. Has the Norwegian government permanently licensed Braathens SAFE as a flag carrier? If so, does this mean that SAS will always be restricted in the Far East and Hongkong?

A. Braathens' Norwegian permit is expiring in 1954, I believe. What is going to happen after 1954 I don't know, but as long as Braathens is flying into Hongkong we most probably will not get any permits there.



DINNER HONORING Per A. Norlin, president of Scandinavian Airlines System, and Carl Ljungberg, secretary general of the International Civil Aviation Organization, was given by AMERICAN AVIATION PUBLICATIONS at the Carlton Hotel, Washington, D. C., on Feb. 14. From left foreground clockwise around table: Charles O. Cary, executive secretary, Air Coordinating Committee; George Unger-Vetlesen, board chairman of SAS in the U. S.; Donald W. Nyrop, chairman of Civil Aeronautics Board; Eric Bramley, executive editor, AMERICAN AVIATION; Charles W. Horne, Civil Aeronautics administrator;

J. H. Carmichael, president of Capital Airlines; Marshall Lindholm, SAS chief line inspector; William D. Perreault, technical editor, AMERICAN AVIATION; Tore Nilert, president of SAS in the U. S.; J. Paul Barringer, deputy chief of State Department's Office of Transport and Communications Policy; Mr. Ljungberg; Wayne W. Parrish, editor and publisher, AMERICAN AVIATION; Mr. Norlin; Stuart G. Tipton, counsel, Air Transport Association; C. E. Woolman, president of Delta Air Lines; Leonard Eiserer, general manager, AMERICAN AVIATION.



HONOR GUESTS chat with the two top U. S. civil aviation officials at AAP dinner. Left to right, CAA Administrator Charles Horne; Carl Ljungberg, secretary general of ICAO; CAB Chairman Donald Nyrop, and Per Norlin, president of SAS.



SAS' TOP OFFICIALS in U. S. talk with J. H. Carmichael, president of Capital Airlines (center). On left is Tore Nilert, president of SAS in the U. S. George Unger-Vetlesen, chairman of the SAS board in the U. S., is on the right.

Q. Does SAS have plans for a trans-Polar route and if so, when?

A. Being so far up in the North we certainly have always been interested in studying the possibilities of flying over the northern part of the world to get over to the U. S. and to the Far East. We have seen that Alaska Airlines has put in an application for 1955 or 1956 to fly a regular route to England over the Pole and it would be unnatural if we didn't show an interest in such a route. But if and when we can fly, I don't know yet.

Q. Do you believe that nations should provide for unlimited frequencies and capacities between their airlines?

A. Well, in Scandinavia we have always been for

freedom in the air. The more freedom we can get the sooner and quicker international air traffic will develop. At the present time, however, I don't think there is sufficient background to have a new international conference to try to come to a multi-lateral agreement. I think we will need more time and more experience before such a step can be taken.

Q. What do you feel are the major things to be done within Europe to improve air safety? What are the major shortcomings from the safety standpoint?

A. More common introduction of GCA and ILS on all our airports and an improved communication system will do a lot for air safety.

Aviation Technician Schools Face Shutdowns

Sources of 85% of industry's certificated technicians threatened despite fast growing needs.

By RICHARD G. FULLER

UNLESS definite and drastic steps are soon taken by industry or government to provide more students for the private aviation schools which train more than 85% of the certificated technicians who work in the industry, most of these schools will be forced out of business by the end of 1952.

This was one of the significant facts recently revealed at the Technician Training Conference sponsored, in Washington, D. C., by the Aeronautical Training Society in cooperation with the Aircraft Industries Association, Air Transport Association, and the Airline Personnel Relations Conference. Purpose of the meeting was to learn what the industry needs and what the country needs.

Henry B. Pickering, chief of the schools and training section of CAA, told the conference that of the 46 private schools now operating, at most 11 and possibly only five can survive this year unless fast action is taken to stop the worsening situation.

More Needed

Shortage of students affects not only the fiscal welfare and survival of the schools. It also means that the increasing needs of the aircraft and scheduled airline industries cannot be met. Here are the industries' needs:

- By the end of 1952, engineering personnel in the aircraft industry must be increased by 25% and the number of trained technicians by 32%.

- The nation's scheduled airlines will need 10,500 or 11,000 more aircraft and engine mechanics by 1954.

- A&E mechanics' training schools approved by the CAA had 4,954 students on Jan. 24, 1952, of which only 793 were non-veterans. Since the training of World War II veterans under the G.I. Bill is coming to a close, this means that there will be virtually no replacements for the 4,161 G.I. students.

- By year's end, the schools will be left with a total of 793 students.

- The USSR is training 100,000 engineers and technicians a year, according to the AIA.

The causes of the situation grow out of a complex world situation which requires expanding military organizations and brings with it spiraling prices.

With both taxes and cost of living continuing to soar, most high school students interested in technical aircraft training find the cost entailed far beyond their financial reach. These men also face the probability of early call to military service. Thus, since no policy of deferment, either to finish technical school or to serve in the critically understaffed industry exists, potential students do not enroll because there is little likelihood they will be able to complete their courses of instruction.

With mandatory military service imminent, many potential students, attracted by recruiting information offering A&E training in service, decide to enlist to take advantage of the offer of free education.

Critical blow to the schools has been the Air Force policy of removing technical training from private contractors in order to conduct its own training schools. Reason for this move is obscure. It is contradictory to reported findings of the so-called Stanford Report, a survey conducted by Stanford University under AF auspices. Published after a study of existing civil contract schools and a comparison of them to in-service

CAA Certificated Mechanic Schools

(Compiled from January 1, 1952 Reports)

Region	Students in Training	Veteran Students	No. Graduated past 6 mos.	No. Dropped past 6 mos.
1	4327	1659	348	1448
2	1375	1088	193	523
3	1173	492	188	181
4	542	287	146	151
5	160	99	43	62
6	1696	991	452	1171
7	188	80	27	32
Total	9461	4696	1397	3568

Ownership

Privately owned schools	46
High schools, jr. colleges, colleges, and universities	66

No. in training

In the 65 high schools and colleges (1634 in one high school)	4507
In the 46 private schools:	
Veterans	4161
Non-veterans	793

Total

4954

Day students in the private schools:

Veterans	1866
Non-veterans	664
Total	2530

Night students in the private schools:

Veterans	2295
Non-veterans (99 in one school)	129
Total	2424

No. graduated from schools during past 1½ years:

Private schools	4540
H. S. and colleges	1373
Total	5913

Night School graduates of private schools during the past year

Of the 46 Private Schools	5 have no students
	4 have only night students
	9 have only veterans in training
	17 have less than 10 non-veterans in training
Total:	35 schools likely to close during 1952

training, the report, according to unofficial information from usually reliable sources, finds the civil schools in many respects superior to the military ones. The Stanford Report is currently classified as "Secret" by the Air Force.

Another blow to the financial health of the technical schools is the competition they get from tax-supported schools. There are 23 junior colleges, colleges, and universities and 42 high schools offering certificated A&E mechanic's courses. Some 4,507 of the 9,461 mechanics in training today are enrolled in the public, tax-supported schools. They offer this training under the Smith-Hughes Act, which provides money for one-half the wages of the instructors and for most of the equipment used.

One large high school instructs 1,634 of the total 4,507 enrolled. In 1951, it graduated only 22 students and only three of these received CAA certificates.

Although there are only 46 private schools, compared with 65 public-supported schools, the private schools have graduated 4,540 of the 5,913 technical-school graduates in the past 18 months.

Legislation

Wayne Weishaar, in a report on the "Technician Crisis" delivered before the board of directors of the National Association of State Aviation Officials recently in Washington, outlined proposed legislation and its possible effects upon the shortage of trained technicians and the survival of the schools. He reported on:

- H.R. 1168 and S. 325. These bills permit flight training for ROTC students in their last year. Since few colleges have their own aviation facilities, the program would be conducted by contract with fixed-base operators located near the colleges.

- S. 1940. Designed for veterans' training, this bill classes flight training as avocational, a classification which would put the training in the same general category as dancing lessons. It would limit tuition and fee payment to schools to one-half the amount such schools charge non-veterans.

- S. 507. Known as enabling legislation, this bill calls for authorization of "such sums as may be necessary." It permits the training of "civilian, governmental, and military personnel," including pilots, mechanics, technicians, air-traffic-control operators, and others. Weishaar pointed out that the bill stipulates that the programs may be carried on either through use of facilities and personnel of the CAA or by contract with educational institutions.



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E. S. Hensley



E. W. Hudlow



George Haldeman



E. B. Franklin

Prominent figures in safety reorganization.

What's Behind CAA's New Safety Setup

29 new positions were filled only after almost two years of planning, testing, and consultation on choices.

IN ANNOUNCING the successful candidates for 29 new positions in CAA's Office of Aviation Safety, of which he is director, E. S. Hensley assured his team of safety agents that the reorganization was a healthy move, one which would do an effective job, but required that everyone "say and do only those things that will build up our organization."

The smoke screen of protest raised by the new appointments has all but obscured the long and painstaking efforts which Hensley and others put into the reorganization of CAA's aviation safety functions to bring them into line with today's needs. Almost overnight a program which had been underway for almost two years, and on which the Senate advised speedy action last August, was made to appear as a hasty and ill-advised move.

The reorganization of the Office of Aviation Safety is important. It affects handling of safety matters of the scheduled and irregular air carriers, personal plane operators, all airmen licensing, and operation of repair stations, mechanic, and flight schools.

The smoke screen resulted primarily from the demotion of two key men, some reassignment of responsibilities, and title changes for others. Some of the smoke was generated by earnest objection to the nature of the reorganization. Still more resulted from old friendships disrupted by the new changes.

All Regions Affected

The reorganization was both in Washington and in CAA's seven regional offices. In Washington two of the four major divisions of Aviation Safety were abolished, the Flight Operations and Airman Divisions. This displaced E. B. Franklin, chief of the former, and W. S. Moore, chief of the latter.

While the functions and title of George Haldeman, chief of the Aircraft Engineering Division, did not change, his division lost two major branches: Air Carrier Maintenance, and Personal Aircraft and Agencies. Haldeman accepted the changes, Hensley has stated, but remains convinced that air carrier maintenance functions should have re-

mained in the Aircraft Division with other engineering functions.

This reassignment of functions was part of the major change in Washington, which included establishment of two safety divisions: Air Carrier Safety and General Safety.

Within Air Carrier Safety Hensley grouped four branches. There are the scheduled operations, irregular operations, air carrier maintenance, and special operations branches. Thus in one group, with a single head, are all the operations and maintenance functions pertaining to airline operators.

Under the General Safety Division Hensley grouped the general operations, general maintenance, examinations, and airmen records branches. The division is responsible for non-air carrier mechanics and mechanic schools, operational activities of aircraft under 12,500 pounds gross weight, and related functions relative to airmen ratings. Once again a single division with responsibilities for all phases of a given segment of aviation has been established. The Medical Division, under Dr. W. R. Stovall, remained unaffected by the changes.

Eight new jobs were created by the reorganization in Washington. Using detailed, well publicized methods, outlined below, these jobs were opened to bids and successful candidates selected.

E. B. Franklin, formerly chief of the Flight Operations Division, won out as head of the new Air Carrier Safety Division.

E. W. Hudlow, formerly chief of the Personal Aircraft Branch, under Haldeman, was selected as chief, General Safety Division.

W. S. Moore, former head of the Airman Division, did not get one of the top assignments.

Both Franklin and Hudlow were given deputy chiefs. These positions

New Regional Safety Chiefs

Region	Chief, Aviation Safety Division	Chief, Air Carrier Safety Branch	Chief, General Safety Branch
1.	E. C. Marsh	R. C. Woodward	T. A. Davis
2.	J. Leslie	J. H. Bickerstaff	L. N. Young
3.	J. T. Shumate	W. W. Scott	G. W. Ireland
4.	M. L. Cunningham	L. R. Seely	W. S. Moore
5.	R. W. Delaney	W. E. Clark	P. N. Flanary
6.	W. A. Klikoff	B. M. Jacobs	R. E. Dake
7.	D. R. Nelson	W. B. Barnes	W. W. Jarrell

were assigned to F. A. Allen, and B. Putnam, Jr., respectively. The remaining four new jobs in Washington consisted of chiefs of the three operations branches and the general maintenance branch, as follows:

Scheduled Operations Branch

L. W. Ashwell

Irregular Operations Branch

R. F. Fender

General Operations Branch

K. R. Aldrich

General Maintenance Branch

G. H. Weitz

The regional changes stirred up more resentment than those in Washington. In each of the seven regions Hensley established a new stratum in the organizational chart: an Aviation Safety Division. The chief of this division has overall responsibility for all functions and duties assigned to Aviation Safety at the field level.

Shortcomings

This arrangement had two apparent shortcomings from the standpoint of harmony in the official CAA family:

• **According to Federal protocol**, the new supervisory post is, organizationally, a division. Previously each of the groupings in the region was a division. These were automatically reduced, in title only, to branches. There were no changes in grade or salary. It was a simple but important matter of prestige attached to the respective titles.

• **Regional administrators** were formerly the only contact between the two Aviation Safety Divisions (Aircraft and Safety Operations) and the Washington offices. The new organization puts one of Hensley's Aviation Safety men in a position to direct the branch activities. Some resentment on the part of regional administrators was bound to crop up.

The regional rework resulted in three new jobs per region: chiefs of the Aviation Safety Division, Air Carrier Safety Branch, and General Safety Branch (see box). Only one equivalent job existed under the old organization. That was the chief of the Safety Operations Division.

Only one of the new chiefs was in a lower grade in the old organization, J. T. Shumate. All except one, W. A. Klikoff, who was previously in the Aircraft Division, were formerly in Aviation Safety. The most complete shake-up was in Region 3 (Chicago) where both the chief and deputy were displaced. Jim Douglas, chief of Region 3, went to Atlanta, while his deputy, Al Neimeyer, was reassigned to the Kansas City district office. The demotion of M. F. "Mac" Clark in Region 4, to a subordinate position, was one of the

changes which caused considerable local concern.

The manner in which the new jobs were assigned is of importance to both CAA and industry groups. Early in October all affected CAA personnel were notified of the proposed changes. Without so much as submitting bids, all those (except Medical) with ratings of GS-13 or higher were considered eligible.

Four tests were devised for these jobs. They did not include technical knowledge tests, since it was considered that anyone in these grades should have the basic technical "know-how" required. The tests, given in Washington and in each region to a total of 310 persons, included:

• **The National Promotion Plan** tests—which weigh experience and background, efficiency ratings, length of service and general data. Credit up to 25%.

• **Administrative judgment**—a written test of the multiple-choice type on practical work situations. A standard government test specially adapted to fit the CAA requirements. Up to 25% credit.

• **Group interview**—groups of four to eight bidders were interviewed by three well qualified persons, including Hensley, for approximately two hours. They were observed in directed discussions of prominent problems. Credit up to 30%.

• **Individual interviews**—About one hour was spent with each man discussing administrative matters, general attitude, personality, etc. Credit up to 20%.

Master List

On the basis of these tests, using a maximum of 1,000 as a composite perfect score for all four sections, Hensley's office made a master list of the findings of the interviewing teams:

All the regional administrators were called to Washington. There, the seven administrators, Hensley, CAA Administrator C. F. Horne, and his deputy, Fred Lee, reviewed the findings. They agreed to select only men in the top 25% of all grades for the Washington jobs and for those of division chiefs in the region. These jobs were rated as GS-15's. Men with GS-15's had to be considered and disqualified by the group before a lower-rated man could be considered.

Hensley had first choice of the men for jobs on his staff. Then each regional administrator made his choice for the job of Aviation Safety Division chief. All choices were reviewed by the whole group. Regional administrators were given first call on men in their own region. Where possible, personal preferences, obtained during the interviews, were also weighed.

Not everyone is satisfied with the results. This may be the best possible sign for the industry. All too often the government is accused of operating to please the individual without measuring his industry worth. Certainly Hensley has made a thorough review of his aviation safety organization. He has made the Washington and field regional organizations compatible and attempted to simplify the relations between the user and CAA.

Only time will tell if he has been successful.

ACC Asks Federal Aid for Transport 'Copters

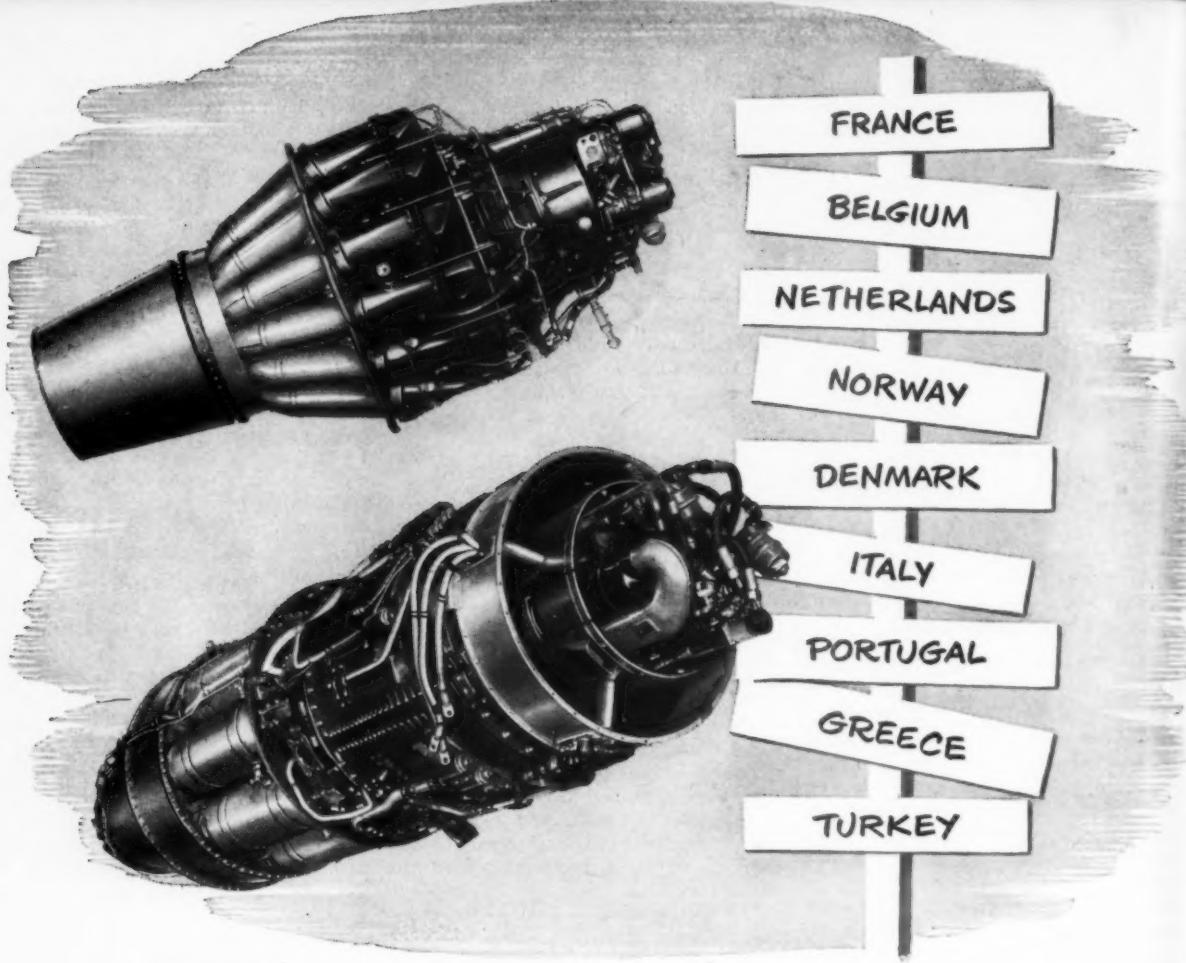
The Air Coordinating Committee has recommended that the government assist in the development of transport helicopters for commercial service.

Predicting increased use of rotary-wing aircraft in short-haul service the ACC in its annual report submitted to Congress last week urged that the Civil Aeronautics Administration, the Civil Aeronautics Board, the Department of Defense, the National Advisory Committee for Aeronautics, and the Post Office Department "broaden their encouragement" of such aircraft.

ACC also believes that commercial helicopter operators should be permitted to buy large transport types in limited numbers. This does not mean, as earlier newspaper stories indicated, that ACC is recommending that commercial orders be sandwiched in with military production now, since military requirements are so heavy that no machines can be spared for commercial use. However, as soon as the military demand slacks off a little, as it might after a Korean truce, ACC thinks that commercial operators should be given a chance to get newer and larger equipment.

The two major transport helicopter types now in production are the Piasecki H-21, which could probably carry 16-20 passengers, and the Sikorsky H-19, a 10-passenger plane. A production possibility and now nearing prototype completion is Piasecki's XH-16, which will be powered by two turboprop engines and will have a cabin as large as that of a Convair-Liner.

The committee said that the use of transport helicopters in daily commercial operations and in postal service would provide technical data useful to the military. First application of the transport helicopter, ACC said, will be in metropolitan area services, carrying mail at lower costs than present, smaller types of rotary-wing craft, and functioning as aerial taxis to and from airports from mid-town locations.



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ANDB's NEW technical director (right), De Loss K. Martin, is sworn in by CAA Administrator Charles F. Horne.

Revitalized ANDB Set for Come-back

Navigation and traffic control agency gets new technical director, asks \$2 million budget.

APPOINTMENT of De Loss K. Martin, formerly on the technical staff of Bell Telephone Laboratories, as technical director of the Air Navigation and Development Board is the first in a series of new projects which will bring the ANDB back into being as a dominant agency in plotting the course of air navigation and traffic control developments. Other important developments include:

* A \$2 million budget request filed with Congress as part of the Department of Commerce's fiscal 1953 budget.

Vital Need

* Improved relationships between the Research and Development Board, representing the military services, and the ANDB, a vital requirement for successful ANDB operation.

* Early appointment of a new chairman of ANDB to succeed TWA's Ralph S. Damon, who resigned some months ago. The technical staff will also be supplemented.

* Rebuilding of military representation on the Board.

ANDB's fiscal 1953 budget will not be large. The \$2 million in cash requested compares with \$3,874,000 in fiscal 1952, and \$4,400,000 in fiscal 1951. It does represent a step in the right direction, since it had been felt that the Board would cease to exist in fiscal 1953. This feeling was bolstered by the loss of Damon, Douglas Ewing, former technical director, and five of the technical staff engineers. Such a move could be and was justified by pointing to the shortage of electronic engineers and laboratory facilities and the critical need

for these facilities by the military services.

CAA Administrator Charles F. Horne is the man primarily responsible for the recent change of heart. With the firsthand knowledge of the importance of ANDB's operation born of his service as CAA's director of Federal Airways, Horne has convinced others accordingly.

RDB Coordination

The Department of Defense urged the Research and Development Board to provide policy guidance for ANDB, assuring the RDB-ANDB cooperation which is critical. The RDB let the Department of Commerce, directly in charge of ANDB, appoint a member who would sit with RDB in deciding matters in which the civil-military interests required coordination. Horne was appointed to this position.

As soon as definite word is received on the fiscal 1953 budget Martin hopes to add at least one more technical staff member. Henry Senf, who joined ANDB in early 1949, has been its only technical member since mid-1951. Senf has been aided by Walter Pike, who is on the Navy's payroll but has spent considerable time with ANDB projects.

Current membership of the board is made up of:

Col. Edgar Sirmyer, U. S. Air Force member replacing Col. Samuel Mundell.

Captain George C. Miller, U. S. Navy member, replacing Capt. William Coggswell.

Lt. Col. William Young, Army member, replacing Col. Walter B. Larew.

John Sommers, CAA member, one of the original members.

Bert A. Denicke, executive secretary of ANDB.

With new membership to reinforce its manpower needs, better coordination with the military services through the new RDB-ANDB arrangement, and the prospect of additional funds with which to work, it appears that ANDB will gain importance once more.



Lt. Col. William Young
Army Member

Capt. George C. Miller
Navy Member

Col. Edgar Sirmyer
U. S. A. F. Member

John Sommers
CAA Member

Henry Senf
Engineer

Here Are Skydrol's Users

SUPERCHARGER	HYDRAULIC SYSTEM
Douglas DC-6s	
Compania Mexicana de Aviacion Pan American-Grace Airways, Inc.	Compania Mexicana de Aviacion Pan American-Grace Airways, Inc. (being converted)
KLM Royal Dutch Airlines	KLM Royal Dutch Airlines (being converted)
United Air Lines American Airlines Braniff Airways, Inc. National Airlines, Inc. Delta Air Lines, Inc. Slick Airways, Inc. Swissair Linee Aeree Italiane Philippine Air Lines, Inc.	
Douglas DC-6Bs	
Braniff Airways, Inc. KLM Royal Dutch Airlines National Airlines, Inc. Pan American-Grace Airways, Inc. Pan American World Airways, Inc. Slick Airways, Inc. (DC-6A) United Air Lines American Airlines Philippine Air Lines, Inc. Swissair	KLM Royal Dutch Airlines National Airlines, Inc. Pan American-Grace Airways, Inc. Pan American World Airways, Inc. Slick Airways, Inc. (DC-6A) United Air Lines
Convair 340s	United Air Lines
United Air Lines Braniff Airways	
Douglas DC-3s	Capital Airlines

A Look at Skydrol, Non-Flammable Fluid

13 lines are using it in cabin superchargers, and Air Force is testing it in hydraulic systems.

APPROXIMATELY one-half million flight hours experience have now been accumulated with Skydrol, the non-flammable type hydraulic fluid developed jointly by Douglas Aircraft Company and Monsanto Chemical Company. As the first successful fluid of this type, Skydrol is making rapid inroads in the field of civil transport operations. Some of the highlights include:

• Thirteen airlines, including six foreign lines, are using Skydrol in their cabin supercharging systems.

• Three domestic airlines and four international lines are using Skydrol in the systems of their new Douglas and Convair equipment. Two of these are airlines changing over operating fleets to the new fluid.

Air Force Tests

• U. S. Air Force is now service-testing a Super DC-3 with a Skydrol-equipped hydraulic system.

• More prominent shortcomings of Skydrol are gradually being overcome by the availability of new protective paints, packings, and related equipment.

No simple solution to the many-sided problem of developing non-flammable type hydraulic fluids exists. All the fluids introduced to date, and there

have been many, have apparent or latent shortcomings. Constructive accomplishment in the field has come to mean the application of every known test of flammability, lubricity, corrosion, stability, etc., and then the taking of steps to correct the shortcomings detected.

This has been typical of the laboratory and field service history of Skydrol. When, after 18 months of cooperative effort, Douglas and Monsanto Chemical announced the development of Skydrol, it was the first hydraulic fluid to meet and exceed the characteristics of HS-1. The latter fluid was a mixture of chemicals, not a hydraulic fluid, established by a special group in the Aircraft Industries Association as having fire-resistant properties "considered safe for commercial aircraft."

United Air Lines was the first line to conduct flight tests with Skydrol, starting tests in 1948 in the supercharging system of a Douglas DC-6. The supercharger is the acid test for general fluid characteristics. Several good tests of flammability exist but in the supercharger fluid is subjected to high temperatures, centrifugal loads, high bearing loads, condensation, and other factors which tend to deteriorate fluid.

On the basis of results with the DC-6 supercharger tests, all DC-6 super-

charger systems at United were converted to Skydrol and tests were initiated on a DC-4 converted from petroleum-base fluid to Skydrol. United has since expressed doubt as to the wisdom of field conversion of operating aircraft; however, the airline's interest in Skydrol as a non-flammable fluid was further verified with the decision to use it in the hydraulic systems and superchargers of the 40 new Convair 340's and in the superchargers of United's new DC-6B's.

Douglas has estimated that it costs about \$275 for packings, back-ups, hose assemblies, and Skydrol processing material to convert a DC-3 to Skydrol, plus about 300 man-hours, providing the conversion is not made during regular overhaul. On the Douglas DC-6 the main hydraulic system conversion can be done with a parts cost of about \$500.

Douglas will convert superchargers for Skydrol use during overhaul at no cost to the operator; however, about \$100 worth of protective paint and related measures are required.

Major Complaint

On of the major complaints voiced against Skydrol has been the high cost of the fluid itself: \$12 per gallon. This objection is based largely on house-keeping methods developed in years of service with petroleum-type fluids, which cost about \$1.35 per gallon today. Simple corrective measures, such as shut-off valves in lines subject to frequent disconnecting, have minimized the fluid losses and resultant high costs. General education of mechanical personnel has also minimized this problem.

Skydrol's relatively high cost has not been without balancing factors. Best possible indication of this is Douglas' recently announced 20% reduction in the overhaul cost for Skydrol-lubricated superchargers. This is based on the improved lubricity of Skydrol over other fluids and consequent reduction in wear. One airline, Monsanto claims, has conservatively estimated an annual saving of \$300 per airplane per year through the use of Skydrol.

An indication of wear on a commonly used aircraft hydraulic pump is provided by the following figures. Service life of the Vickers PF-3911-25 pump has been estimated to be 3,000 hours or more using Skydrol in the system. In a test set-up using the Vickers pump in a 3,000 psi system, the rig using Skydrol performed satisfactorily for 450 hours of accelerated cycling beyond the range of normal system operation. Subsequent disassembly of the pumps proved all parts to be in serviceable condition.

In parallel tests under the same conditions, it was necessary to discontinue the tests at 187 hours when petroleum-based AN-VV-O-366B fluid was used,

General Properties of Skydrol

Appearance	Clear, transparent, oily liquid	ASTM Pour Point	-70° F.
Color	Light green	Autogenous Ignition Temperature:	1050° F.
Odor	Mild, pleasant	Moisture, %	0.25 Maximum
Specific Gravity	@ 32° F. 1.098 @ 60° F. 1.086 @ 176° F. 1.0345 @ 248° F. 1.0031	Boiling Point @ 760 mm Hg.	709 F. (Calculated)
Approximate Weight per Gallon	@ 32° F. 9.14 lbs. @ 60° F. 9.05 lbs. @ 176° F. 8.82 lbs. @ 248° F. 8.36 lbs.	Specific Heat (50-120° F.)	0.42 BTU/lb/° F.
Solubility		Neutralization Number (Mg. KOH/gm)	0.18 Maximum
Coefficient of Thermal Expansion		Skydrol in water	0.003%
Thermal Conductivity		Water in skydrol	0.25%
Flammability	Does not support combustion. (Exceeds requirements of AMS-3150)	30-250° F.	0.000418/° F.
Toxicity	Nontoxic as liquid or vapor. Will not cause skin irritation. May cause temporary smarting, without permanent effect, if splashed into the eye. Requires no special handling.	0-120° C.	0.000753/° C.
Viscosity Index		0.0477 BTU/Hr/Ft ² /Pt/° F.	
Viscosity	Temp. ° F. 160 -40 Less than 7000 -30 2256 100 15.5 210 3.85	Centistokes	SUS
Skydrol Modulus of Compressibility	328,000 psi (Commercial hydraulic fluid, 247,000 psi; water, 300,000 psi)		
Electrical Properties	Frequency 100,000 cycles/sec. 10,000 cycles/sec. 1,000 cycles/sec.	Dielectric Constant 6.68 6.67 8.87	Power Factor 0.0076 0.062 0.49
	D. C. Resistivity 5.0 x 10 ¹⁰ OHM-CM		

and at 232 hours when AC-3580D was used, because of severe chattering and erratic regulator operation. Disassembly proved that, using the -366 and -3580 fluids, excessive steel-on-bronze wear occurred.

Using a PESCO IC-582-JB gear-type pump in a 1200 psi system with Skydrol enabled satisfactory pump operation for 400 hours, at which time the pump was maintaining volumetric efficiency of 95.4% to 98.2%.

Deterioration

During its service life Skydrol, like any fluid, will deteriorate to some extent due to contamination with incompatible materials, thermo decomposition which changes its acid number, and mechanical shearing which changes the fluid viscosity. In supercharger installations, where normal fluid life is about 4,000 hours, it has become common practice to filter Skydrol through fuller's earth filters to remove contamination. Two popular filters of this type are the Lubermeyer and Honan-Crane units.

Once filtered, three simple ASTM tests are used to determine the fluid characteristics. It may be reused unless its acidity exceeds 0.5%, its viscosity falls below 13.0 centistokes viscosity at 100 degrees Fahrenheit, or its specific gravity drops below 1.08. When the fluid no longer meets these specifications,

Monsanto refunds \$2.00 per gallon. While this is not the same as a reduction in initial cost of \$2 per gallon, it is a substantial reduction.

Skydrol's solvent action on paint remains the most bothersome problem and is getting considerable attention. Less prominent but of importance are the noise-dampening-accumulator diaphragm failures. This has occurred in DC-6 systems with PESCO 3,000-pound pumps. Principal cause is the proximity of the noise-dampening accumulator and pump, which results in high fluid temperatures working on the diaphragm. United Air Lines is investigating the possibility of moving the accumulator further downstream from the pumps.

O-rings have caused some difficulties in Skydrol-equipped systems both in the DC-4 and DC-6. In CMA's DC-6's these failures have occurred in the oleo struts and wing-flap actuating cylinders in as little as 30-40 hours operation. Investigation proved these were caused by chewing action of the leather back-ups during high-frequency, low-amplitude vibrations. Use of spiral Teflon back-ups solved the problem. Spiral Teflon back-ups are becoming standard in both petroleum hydraulic systems and skydrol systems.

Thirty-one of 50 "squawks" reported in 2600 hours of operation with United's DC-4 cargo liner resulted from

high compression "set" in the butyl-type large diameter O-rings in the brake system. Monsanto has now developed a butyl-type rubber which has suitable compression-set properties.

Within six months a universal-type packing now being developed by Monsanto's Rubber Service Laboratories and Phillips Petroleum Company is expected to be ready for flight test.

New G-E Jet Blade Process Aids Production

General Electric Co., Inc., has developed a new method of making jet engine compressor blades which will help break one of the major bottlenecks of the jet production program. The new method, outlined by C. W. LaPierre, manager of GE's Aircraft Gas Turbine Division at a press conference in Washington, consists of fabricating the blades in place of the relatively slow and expensive forging process now being used.

In the forging process, both the blade and its base plate are hammered out of a single piece of stainless steel. The new method consists of rolling a long sheet of blade steel into proper blade counter, then cutting it to actual blade lengths and welding it to the base plate. As yet, this method is only good for the stator blades, the stationary blades in the compressor system, and not for the revolving rotor blades, because of the greater stresses encountered. However, GE is working on application of the process to the rotor blades as well.

The Air Force has approved substitution of fabricated stator blades in the GE J-47-23 engine now going into production for use in the Boeing B-47 jet bomber. Additional production facilities have been earmarked for blade production at the company's Lockland, O., plant.

ALPA Reaffirms Sayen

Air Line Pilots Association members, by a vote of 4,601 to 101, have reaffirmed election of Clarence N. Sayen as president of the union, and upheld their ouster of David L. Behncke, 4,597 to 104. ALPA and Behncke are involved in a legal dispute to determine whether Behncke's ouster last summer was legal and whether he or Sayen is the properly constituted head of the union. Federal judge is awaiting final recommendations of the master in chancery.

UAL Expands Teletype

United Air Lines has started expansion of its teletype system to add 6,000 miles to its present 20,000-mile private line teletype network for space control messages. Program is to be completed by June.

MAN'S FASTEST FLIGHT



NAVY-DOUGLAS D-558-II Skyrocket on
August 7, 1951, established new world records
for speed and altitude for a piloted airplane.
For security reasons, no official
figures have been released.

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Dow Chemical Co. • DuPont DeNemours & Co., Inc. •*

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Robert Heatherington & Son, Inc. • Hobbs Battery Co.*

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Kirkhill Rubber Co. • Koehler Aircraft Prod. Co. •*

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Peerless Electrical Prod. • Pesco Prod. Co. • Pioneer*

*Radio Television Supply Co. • Reaction Motors, Inc. •
Shaefer Bearings Corp. • Shakesproof, Inc. • Shultz*

Telephonics Corp. • Thomas & Betts • H. I. Thompson

*Tungsol Lamp Works • Union Hardware Co. • United
Ward Leonard Co. • Westinghouse Electrical &*

The Navy...Douglas...and 169 U. S. business firms cooperated to build the supersonic Douglas "Skyrocket"—world's fastest airplane!

As the Navy's "Skyrocket" blasted its way to new world speed and altitude records for a piloted airplane, its sleek body bore the fruits of millions of man hours.

This "flying laboratory"—designed, built and flight tested by Douglas and the Navy Bureau of Aeronautics—utilized the technological skills and craftsmanship of 169 American firms. From tiny nuts and washers to complex gyros, parts were created to Douglas specifications in plants from Massachusetts to California.

On teamwork like this...on the ability of Americans everywhere to explore the unknown and do the "impossible"...rests the hope of keeping the U. S. first in the air. For its part, Douglas continues to pioneer in all fields of Aeronautics, from jets to guided missiles. Douglas Aircraft Company, Inc.

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CAA Facilities Hit By Funds Shortage

Shortage of an estimated \$450,000 in personnel funds is expected to prevent commissioning of a large number of visual and electronic landing aids and certain other CAA functions which should otherwise be put into operation between now and July. The following list, representing the "worst possible" condition, which assumes that no additional funds will be available before July, was compiled by CAA at the request of the DAILY.

Instrument Landing Systems (38)

Location	Completion Date	Location	Completion Date
Pittsburgh Intern'l	January	Chattanooga, Tenn.	March
Ft. Worth, Texas	May	Burbank, California	March
Albany, N. Y.	April	Greensboro, N. C.	March
Little Rock, Ark.	June	Winston-Salem, N. C.	April
Youngstown, Ohio	April	Mobile, Alabama	April
Savannah, Georgia	March	Burlington, Vermont	May
Augusta, Georgia	April	Baton-Rouge, La.	January
Evansville, Indiana	March	Santa Barbara, Calif.	February
Detroit, Michigan	January	Lubbock, Texas	February
Pendleton, Oregon	May	Wheeling, W. Va.	May
Flint, Michigan	March	Macon, Georgia	February
Great Falls, Mont.	June	Orlando, Florida	April
Sioux City, Iowa	April	Monroe, Louisiana	February
Monroe, Louisiana	February	Sioux Falls, S. Dak.	March
Salem, Oregon	February	Huron, South Dakota	April
Columbia, S. C.	January	Bellingham, Washington	June
Casper, Wyoming	February	Lincoln, Nebraska	April
Joplin, Missouri	February	Quincy, Illinois	May
Pt. Smith, Ark.	March	King Salmon, Alaska	April
Anchorage, Alaska	February		

Airport Surveillance Radars (12)

Norfolk, Virginia	February	San Francisco	April
Detroit, Michigan	March	Philadelphia, Pa.	February
Houston, Texas	March	Baltimore, Maryland	March
Indianapolis, Indiana	April	Birmingham, Alabama	May
Jacksonville, Florida	March	Pittsburgh, Pa.	May
Oakland, California	June	New Orleans, Louisiana	June

Precision Approach Radar (1)

Pittsburgh Intern'l	June
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Airport Control Towers (2)

Pittsburgh Intern'l	March	Ft. Worth, Texas	May
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Fan Markers (6)

Jewel Lake, Alaska	January	Lubbock, Texas	January
Harbor Island, Wash.	March	Rapid City, S. Dak.	June
Sisters Island, Alaska	June	Tiller, Oregon	July

Radio Beacons (5)

Jewel Lake, Alaska	January	Katalla, Alaska	January
Payson, Arizona	Dec. ('51)	Oxford, Kansas	February
Fairbanks, Alaska	March		

Communications Stations (5)

Corona, New Mexico	Dec. ('51)	Van Horn, Texas	December
McAlester, Oklahoma	June	Farmington, N. M.	July
Huntsville, Alabama			

Neon Bar Approach Lights (5)

Shreveport, La.	March	Chattanooga, Tenn.	May
Ft. Worth Inter., Tex.	April	Albany, N. Y.	April
Pt. Wayne, Indiana	April		

High Intensity Approach Lights (2)

La Guardia Field, N. Y.	March	Portland, Oregon	April
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SUPER CONSTELLATIONS TO GET TURBO-PROPS

The U.S. Navy has selected the new R70-1 Super Constellation as ideally designed for vital conversion to turbo-prop power. Only minimum modifications are required, according to BuAer. No structural changes of the empennage, fuselage or basic wing are necessary.

Significance to airline operators is that Super Constellations with Wright 3250-h.p. compound engines can later be converted to turbo-pros. This conversion to Pratt & Whitney T-34 Turbo Wasp engines will put the Super Constellation in the 450-mile-per-hour-class.

The Super Constellation offers any airline operator any performance he desires, from high-density coach travel, to luxury over-ocean travel, or it can be used for efficient, economical cargo purposes.

Never before has the basic structure of any aircraft provided so adequately for growth, assuring the operator many years of competitive performance. Compared with any of today's certificated aircraft the new Super Constellation is superior in versatility, speed, payload, range and ability to earn greater profit.

NEWS NOTES FROM LOCKHEED

Eight international airlines have now ordered Super Constellations—most recent: Seaboard & Western Airlines and Braathens S.A.F.E. Air Transport... With Navy and Air Force orders, the total demand now exceeds 200.... A new "White House Squadron" of Lockheed F-94 All Weather Jet Fighters is guarding Washington, D.C. ... Lockheed is occupied with aircraft using six different kinds of power, including reciprocating engines, turbo-pros, jets and rocket power.... For pilot comfort every Lockheed jet fighter has a cockpit cooling system equivalent to 100 household refrigerators.... The single Allison jet engine in the Lockheed T-33 jet trainer is more powerful than all four engines of the B-17 bomber of World War II fame.... Pilots of many nations learn jet flying in Lockheed T-33 trainers, and recently when two T-33's were delivered to Turkey they were inaugurated in preflight Mohammedan rites including a lamb sacrifice.

FROM THE WORLD PRESS

Under the headline, "New Facts on Jet Combat," *Aviation Week* reports from Tokyo: "The Lockheed F-80 (Shooting Star) still is considered to be the best ground attack jet in Korea. There is considerable belief here that development of an airplane along the proved lines of the F-80 is the answer to the interdiction-close support requirement." Thus another Lockheed design continues to prove its basic "rightness" even though more modern types have replaced it in Lockheed's production line.

Extra Section

By William D. Perreault



LOCKHEED'S occupational accident report of 1951 shows the injury rate jumped one-third over 1950, probably the result of increased employment and labor turnover. Over 55,000 man-hours were lost due to injuries on the job during 1951 at a cost to Lockheed (in time alone) of \$276,000. Five most common types of accidents at Lockheed—all readily preventable—were: eye injuries from drilling and cleaning work areas with air hoses; falling from work platforms or tripping over small articles left on the floor; strains and sprains from lifting or pushing heavy objects; head and foot injuries from things falling from over-crowded work benches or from overhead platforms and storage bins; and hitting misplaced dollies, material piled on floors or projecting parts of assemblies.

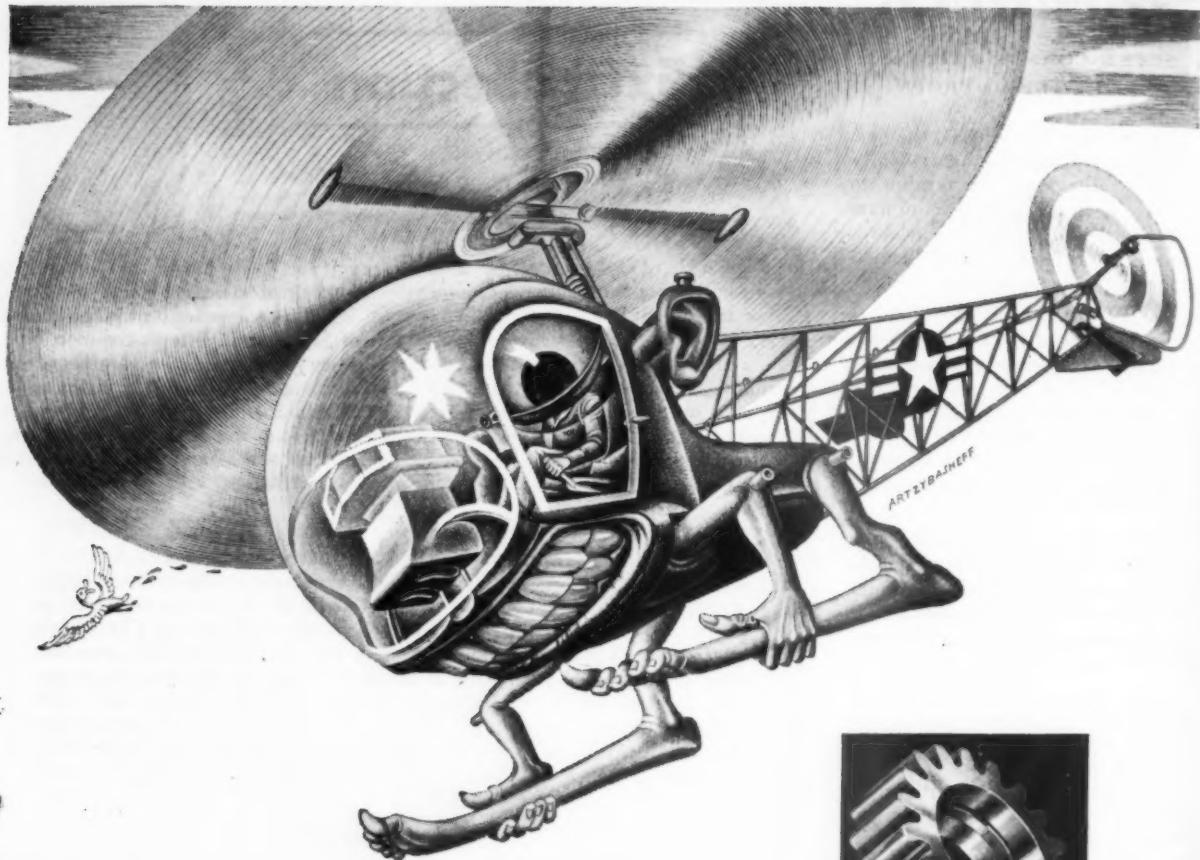
Two issues back we reported on a navigation-light-ice-light circuit designed by All American Airway's El Cheyno, which connected the bright ice lights into the white light flashing circuit of the navigation lights at the pilot's discretion, and which AAA is using on all its fleet. Cheyno has given a lot of thought to the navigation and identification light problem. One of his logical complaints is about the apparent dead-end in navigation light development. Cheyno complains that the Grimes light used today is the same one in use for the past decade and could stand some scientific reworking. We agree with this attitude, feel that lights have not kept pace with other developments and an industry program could do much to correct the condition.

Getting so flight simulators, those glorified Link trainers which are paving the way to better, cheaper training and safer operations, are almost as complex as the aircraft they reproduce. Link Aviation, Inc., reports that the B-47B Stratojet simulator now being completed required 7,500 engineering drawings, 130 instruments, 700 electron tubes, 66 motor-generator sets, 25 miscellaneous motors, 170,000 feet of wire, 200 toggle switches, 4,000 resistors, 600 AN-type connectors, 1,000 gears, 250 relays, and 380 separate computer assemblies. It weighs 16,000 pounds.

Seems to us the new "Labelon" stick-on tape for identifying plumbing, labeling parts, stock room labels, and similar uses has some interesting possibilities. It comes in a roll-type dispenser with one side sticky, the other side a cellophane-like gloss. Its real distinction is that the glossy side is clear with a white background. Writing on the surface leaves a clear mark which is free from smudging. Thus it's possible to tailor-make labels for all types of applications with no effort but with assurance that they'll last. It's made by Labelon Tape Company, 450 Atlantic Ave., Rochester 9, N. Y.

American Airlines' Jack O'Donnell, a top airline safety engineer, advises us that an extension light listed in the New Products page of *AMERICAN AVIATION* for Feb. 4, while it may well be approved by the Underwriters' Laboratories, is not a good type for aircraft and hangar use. Notes Jack: "More than one fire has been caused by dripping gasoline, alcohol or similar material breaking the bulb in an open extension lamp. There should at least be a glass globe and for hazardous locations an explosion proof assembly." Many thanks, Jack.

Always wondered about that monkey wrench business. The monkey wrench is standard equipment in most mechanical lines but is scarce in aviation. The adjustable wrench, serving much the same purpose, is used instead. In "Uses Unlimited," a publication of Minneapolis-Honeywell's Micro Switch Division, it's reported that "the monkey wrench was not invented by a monkey, but by a man named Moncke."



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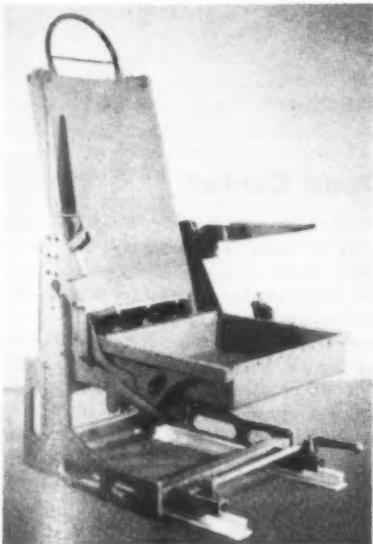
New Products

Sealant Removers

Kelite Products has announced a new chemical for removal of fuel tank sealants. Called Kelite Deseal 1-NS, the sealant remover consists of chemicals which require no inhibitors to prevent etching of fuel tank metals. The manufacturer considers this feature an important advancement, inasmuch as there have been scattered instances where etching has occurred because inhibiting agents were removed by the action of circulating pumps used in the stripping operation.

The new product makes possible successful stripping of most types of sealants by the circulating fill-and-drain bond-release method, which does not require constant supervision by workers. The bond-release removal of the sealant virtually eliminates loss of expensive stripping chemicals through absorption, evaporation, or sludge formation.

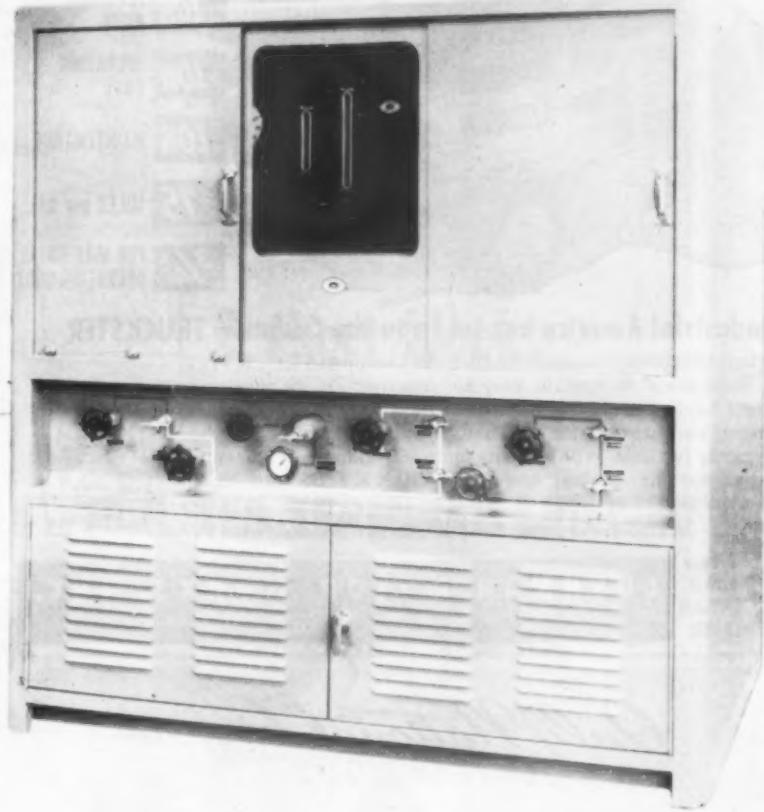
Address: **Kelite Products, Inc.**, P. O. Box 2917, Terminal Annex, Los Angeles 54, Calif.



Pilot Seat

Model 440A pilot seat has been developed by Aerotherm Corp. for long-range aircraft such as transports and bombers. Designed in accordance with Air Force specifications, the seat has been successfully tested to support 1,500 pound back loads and 4,000 pound loads at highest vertical position and also in the full-reclined 33½ degree position.

The frame of the seat is of magnesium, steel, and aluminum alloys,



Test Stand

Introduction of a new, pneumatic test stand which performs functional tests on components of aircraft and guided missile pneumatic systems has been announced by Sprague Engineering and Sales Corp. Model S-421 provides three separately regulated test outlets with ranges of 0-200, 0-2000, and 0-6000 psi. Two flowmeters which measure leakage have ranges of .01 to .2 cfm and 2 to 28 cubic inches per minute respectively.

Components are mounted in an all-enclosed, steel-welded and reinforced

forming a flexible structure. Plasti-cel molded cushions for seat and back are rubber-padded and canvas-covered. Seat cushion of pilot's Model 440A is interchangeable with a survival kit. Weight of the unit is 50 pounds with cushions.

Seat bottom is adjustable seven inches vertically, and the back can be positioned from normal 13½ degrees to a full-reclined 33½ degrees. A

cabinet measuring 72 inches wide, 36 inches deep, and 74 inches high. The test area may be closed for safety by sliding the quarter-inch-thick steel doors.

A two-inch-thick, bullet-proof glass window is provided for observing the tests being conducted. All controls may be operated with the doors closed.

The unit furnishes maximum static pressure of 6,000 psi by boosting gas from a customer-furnished 2,000 psi nitrogen cylinder with a Sprague Model S-3600-WB air booster.

Address: **Sprague Engineering and Sales Corp.**, Gardena, Calif.

movement of six inches fore and aft is provided for the seat by track mounting. Adjustable track rollers eliminate wobble. Locking mechanism for vertical, recline, and fore and aft adjustments can be interchanged to left and right sides of the seat.

Address: **The Thermix Corp.**, Greenwich, Conn. (project engineers for The Aerotherm Corp.).



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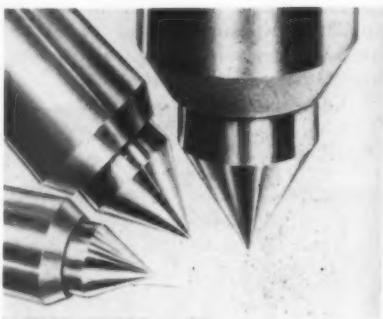


Non-smudge Tape

Labelon Tape Co. has developed a self-sticking tape which can be written on without smudging. The new tape, being marketed under the name "Labelon," sticks firmly without moistening to any smooth, clean surface and strips off clean without scraping. The manufacturer states that it will not curl or discolor with age or variations in temperature, but adheres tightly at temperatures as low as 40 degrees Fahrenheit and as high as 160 degrees F. Writing instrument may be a pencil, stylus, or a ball-point pen. Tape consists of a writing surface sandwiched between two layers of acetate.

Standard colors are blue, green, black, and red. Standard widths are $\frac{5}{16}$ inch, $\frac{1}{2}$ inch, $\frac{3}{8}$ inch, $\frac{3}{4}$ inch, 1 inch, and $1\frac{1}{2}$ inch. Special widths up to $2\frac{1}{2}$ inches may be obtained on order.

Address: Labelon Tape Co., Inc.
450 Atlantic Ave., Rochester 9, N. Y.



Dead Center

Exmet, a new alloy which resulted from research to find metals that withstand heavy wear and stress encountered in high-speed, high-temperature jet-engine operation, is being used in the new DoALL Super-Center, a dead center which is said to outperform any type of center previously available for lathes and grinders.

The Super-Center is described as answering the problem of galling, burning, and frequent lubrication. Test performance has indicated that when subjected to speeds high enough to turn both work and tip of the center red hot, neither piece suffers appreciable damage. Manufacturer states that the Super-Centers have run for weeks without regrinding on jobs which normally require fresh H. S. steel each day.

These centers are available in all sizes of Morse, Brown & Sharpe, and Jarno tapers, both in conventional styles for lathes and in gashed type for grinding operations or turning where extra clearance is needed.

Address: The DoALL Co., Des Plaines, Ill.

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NATIONAL Airlines *Airline of the Stars*



Straightening Press

A precision hydraulic straightening press for sensitive work is being built by Hufford Machine Works. A feature of the machine is an automatic stroke limiter which protects against overbending.

A vertical shipper rod attached to the side of the frame is linked to a hand lever which serves as manual control for the press. When this rod is shifted up or down, fluid volume from the variable-volume pump is increased or decreased in proportion to lever displacement. A stop attached to the shipper rod is engaged by the ram in its descent, gradually bringing hydraulic volume to zero and halting the ram automatically at any predetermined position.

A special attachment is furnished to accomplish rapid stroke alterations. In this attachment, a threaded shipper rod is rotated by a reversible motor controlled by push buttons. The stop, being threaded to this lead screw, is thus automatically shifted up or down as rotation occurs. Final micrometer settings are made by means of a hand-wheel connected to the screw by a gear box. Illustrated is Model 85. Its weight is 150 tons, but the manufacturer states that other models are available in greater or smaller tonnages.

Address: Hufford Machine Works, Inc., 1700 E. Grand Ave., El Segundo, Calif.

Radio Transmitter

Announced by Lear, Inc., is a new 18 channel, five-watt transmitter suitable for use in executive, commercial, military, and personal airplanes. The 18 frequencies are selected by remote control through a panel switch. On each of the frequencies, the transmitter is capable of putting out more than five watts, 100% modulated with voice quality described by the manufacturer as crisp and clear, unusual for a device

of this kind.

The new VHF transmitter has a 7½-watt power amplifier for the cockpit speaker to boost the output level of aircraft receivers which normally have only enough volume and power to operate headphones. When not in use as a transmitter, its modulator is available to function as a booster amplifier for the cockpit speaker. It also supplies a crystal calibrator check which enables the pilot to pre-tune his receiver to the crystal frequency upon which he is going to transmit. Thus by pushing a button he can tune his receiver to the

same frequency he has selected on the transmitter. This eliminates necessity of asking the tower for a count when tuning in.

The transmitter is contained in a small package weighing less than 10 pounds, including a self-contained power supply. It is available as a 12- or 24-volt system. The model LVT-18 transmitter is designed to meet all ATC and military specifications as to reliability and performance.

Address: Lear, Inc., Learcal Division, 11916 W. Pico Blvd., Los Angeles 64, Calif.

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Line Hooks

A new type of hook which provides a quick method of connecting or

disconnecting lines to other lines—rope, wire rope, or chain—or to fixed objects has been developed by Brummel Hook Co.

The hooks can be instantly joined or detached by a turn of the fingers, even in the dark by sense of touch, according to the manufacturer. They cannot be disconnected until intentionally taken apart.

The hooks are described as strong in proportion to their size and weight in the several sizes and types. These are made of corrosion-resistant manganese bronze. "Featherlight" units are available made from aluminum-base

"Ternalloy." All types and sizes have a high safety factor above their rated safe working loads.

Address: **Brummel Hook Co.**, 1619 W. Winona St., Chicago, Ill.



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Fire Extinguishers

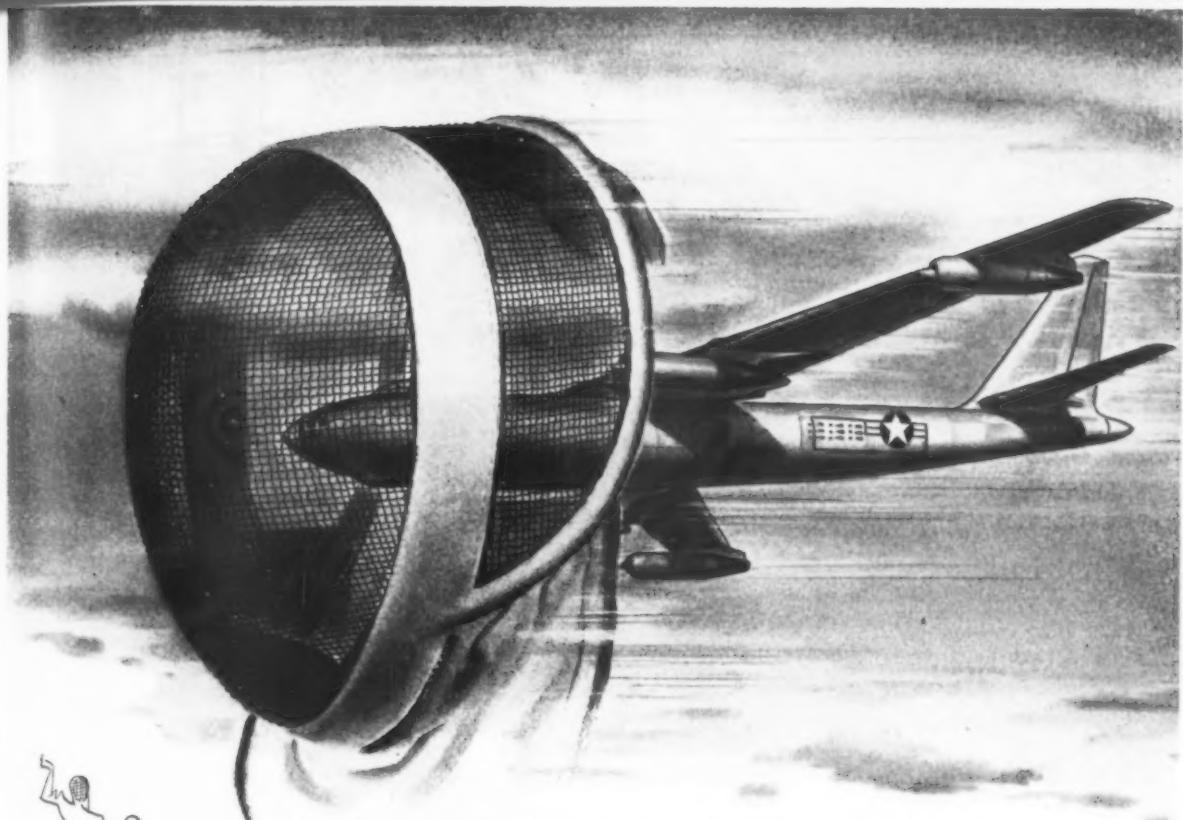
A non-inverting, pressurized, water-type fire extinguisher is being introduced by The General Pacific and General Detroit Corporations. Called the General Quick Air Water-Type Fire Guard the extinguisher is especially recommended for use out of doors, with an antifreeze charge when freezing temperatures are expected.

The device has a squeeze grip or lever action control and a panic-proof rip puncture pin which insures discharge will take place once the seal is punctured, regardless of the position of the handle.

Shell of the extinguisher is made of seamless drawn brass. There are no riveted seams. All components of the head are also made of brass.

All parts are removable as a single unit since the operation lever, carrying handle, discharge tube, and carbon-dioxide cartridge are all attached to the head assembly. The charge consists of plain water and a pressurized carbon-dioxide cartridge. The extinguisher has Underwriters' approval.

Address: The General Pacific Corp., 1501 East Washington Blvd., Los Angeles 21, Calif., or The General Detroit Corp., 2272 East Jefferson Ave., Detroit 7, Mich.



NEW PROTECTION *for our deadly duelers of the sky!*

Like the face of a fencing master, the air inlet ducts of today's jet aircraft must be protected by masking screens.

Unless screened, such ducts suck in stones, wrenches, hats, birds and other foreign matter when planes are on the ground or flying at low altitude. On the other hand, screens must be folded back at upper altitudes to allow maximum power and to avoid the danger of icing.

To operate screens on jet engines, AiResearch engineers have devised an actuating system, similar to the cowl flap systems in use on most airplanes. Screens are opened and closed by a

series of small sturdy screw jacks which are operated by a compact $\frac{1}{6}$ hp power unit.

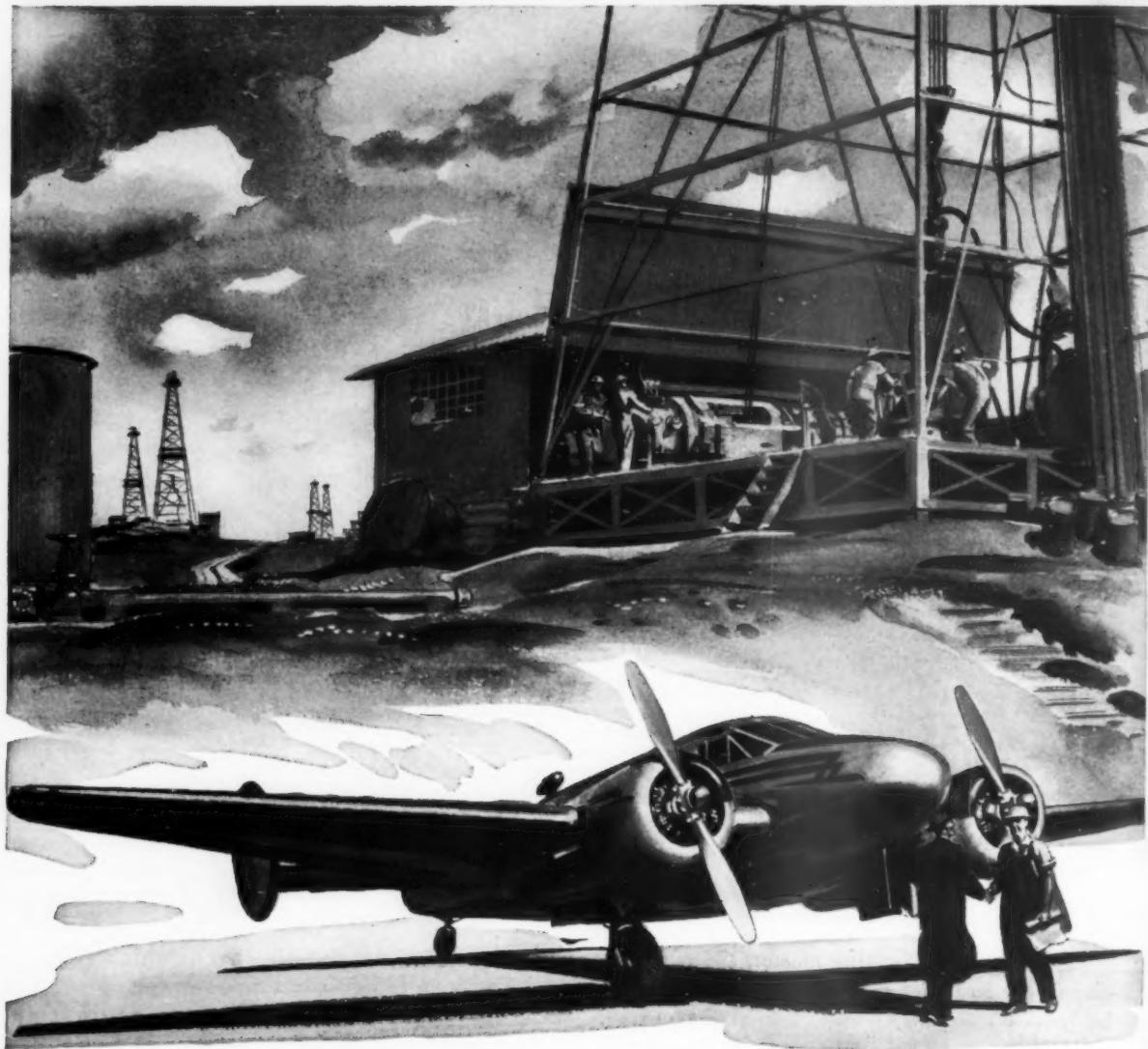
Today, AiResearch is one of the world's largest producers of aircraft electrical power equipment. In current production are more than 300 electrical products, including actuators, temperature controls, alternators and electrical motors.

All AiResearch electrical products must be small, lightweight, compact. And all undergo the most rigorous "environmental" tests such as humidity, explosion, altitude, temperature, sand and dust, salt spray, fungus, vibration, immersion, and anti-radio noise.

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MODEL 18



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TWIN BONANZA

How Four Top Cargo Carriers Compared, 1950-51

Domestic Revenue Cargo Ton-Miles				American Airlines				United Air Lines				
Common Carrier, ton-miles	1951	1950	Change	1951	1950	Change	1951	1950	Change	1951	1950	
Revenue freight	57,194,025	35,304,598	+ 5.3%	22,138,925	28,034,278	-21.0%	9,881,945	9,215,794	+ 7.2%	32,020,870	37,250,072	-14.0%
Revenue express	8,937,664	7,481,535	+19.4%									
Total cargo	46,131,689	42,786,133	+ 7.8%									
Charter, ton-miles							77,520	(not available)				
Grand Total	46,131,689	42,786,133	+ 7.8%				32,098,390	37,250,072	-14.0%			

Domestic Revenue Cargo Ton-Miles				Flying Tiger Line				Slick Airways				
Common Carrier, ton-miles	1951	1950	Change	1951	1950	Change	1951	1950	Change	1951	1950	
Revenue freight	27,874,713	19,403,339	+43.6%	44,151,350	35,725,374	+23.5%						
Revenue express												
Total cargo	27,874,713	19,403,339	+43.6%	44,151,350	35,725,374	+23.5%						
Charter, ton-miles	1,298,325	2,105,970	-38.3%	23,739,262	9,887,127	+140.1%						
Grand Total	29,173,038	21,509,309	+35.6%	67,890,612	45,612,501	+44.8%						

4 Largest Cargo Carriers Gained 19% in '51

AA, UAL, Slick and Tigers hauled 175.2 million ton-miles last year, including charter work.

THE four largest U. S. cargo carriers hauled 175,293,729 ton-miles of traffic in 1951, a 19% gain over the 147,158,015 ton-miles performed by the same lines in 1950.

These totals included everything—common carrier freight and express plus charter work.

Of the four lines—American Airlines, Slick Airways, The Flying Tiger Line and United Air Lines—only United showed a decrease, dropping 14% from 1950.

Which carrier was the 1951 leader depends on what categories of cargo are considered:

Slick led if revenue freight and

charter ton-miles (company does not handle express) are included. It handled 44,151,350 ton-miles of revenue freight plus 23,739,262 charter ton-miles, for a total of 67,890,612. This represented an overall 44.8% gain over 1950.

American led if only common carrier traffic—revenue freight and express—are included. Its total for these two categories was 46,131,689, against Slick's 44,151,350. AA did no charter work in 1951. Its overall increase was 7.8%.

Including charter work, the two certificated scheduled all-cargo lines, Slick and the Tigers, were ahead of American and United, 97,063,650 to 78,230,079 ton-miles. Excluding charter, AA and UAL led, 78,152,559 to 72,032,063.

Big Gains

Biggest gains were shown by the two cargo lines. Slick's common carrier traffic jumped 23.5%, while charter was up 140.1%. The Flying Tiger Line's common carrier traffic was 43.6% over 1950, although its charter work slipped 38.3%. On an overall basis, its traffic increase was 35.6%.

Against this, AA was up 7.8%, while United decreased 14%. This drop was due to revenue freight, down 21% from 28,034,278 ton-miles in 1950 to 22,138,925 in 1951. United's express increased 7.2%, from 9,215,794 to 9,881,945.

In 1950, the picture was different. AA and UAL led the field, with or without charter. Including common carrier and charter, they were ahead of Slick and

the Tigers, 80,036,205 to 67,121,810. Counting only common carrier traffic, the totals were 80,036,205 and 55,128,713 ton-miles, respectively.

'Organized Conspiracy' Claimed by Non-Skeds

At a three-day meeting in Washington, over 50 non-scheduled airlines adopted a resolution aimed at eliminating any "organized conspiracy" of the certificated carriers to drive them out of business.

The non-skeds say they plan a complaint to CAB for investigation to determine if evidence of unfair trade practices can be shown, plus a possible anti-trust suit and action for treble damages in the courts.

Resolution was adopted specifically as a result of recent developments in the field of scheduled airline coach operations, and CAB's recent reduction in C-46 operating weight.

CAB Wants Control Over Non-Sked Ticket Agents

In a bill introduced by Sen. Johnson (D. Colo.) CAB has asked Congress to empower it to deal directly with ticket agencies engaging in "Flagrant abuses and deceptions" in selling air transportation.

Proposal is aimed at certain agents for non-scheduled airlines whose practices have led to 538 complaints to CAB since July, 1948. Plan is to amend the Civil Aeronautics Act to make such practices as misleading advertising, refusing to make refunds, and false insurance information misdemeanors subject to fines ranging from \$100 to \$5000.

Rate Increases

Flying Tiger Line and Slick Airways, the two certificated transcontinental all-cargo carriers, have proposed air freight rate increases to become effective April 15, subject to Civil Aeronautics Board approval. Increases for both lines will average 10% on general commodity rates with the further proposal to make general rates applicable to all shipments except those moving under CAB approved below-minimum directional rates (eastbound backhaul) and a few selected specific commodity rates.

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Genial get-together . . . 20,000 feet up in *El InterAmericano's* "Fiesta Lounge." Pre-dinner cocktails are complimentary.

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Lentcraft Photos

DISCUSSION OF MUTUAL PROBLEMS was held by Northeast Airlines officials and air taxi operators. Left to right, kneeling, Fred DeRosa, Wiggins Airways, Boston; Charles Lawler, NEA interline sales director; Edwin Breed, NEA district sales manager at Lawrence; Egbert Jessup, Skyhaven Inc., Laconia, N. H. Seated, Charles McKenney, NEA dsm Portland; Gardner Mills, New Hampshire aeronautics inspector; Frank Sweeney, Massachusetts Aeronautics Commission; R. L. Turner, NEA v.p.-sales; Warren Smith, schedules and tariffs manager; John Van Arsdale,

Cape Cod Flying Service, Boston; D. A. Hibbs, NEA dsm New Bedford; George Pinto, Coonamessett Ranch Airport, Falmouth, Mass. Standing, Russell Hilliard, New Hampshire Aeronautics Commission; Lee Bowman, Bowman Flying Service, Keene, N. H.; Eugene McCarthy, NEA dsm Bangor; Kenneth DeWitt, Central Maine Flying Service, Old Town, Me.; Fred Greenwood, Vermont Aeronautics Commission; Harold Canvin, NEA dsm Montreal; Sumner Atherton, Connecticut Valley Airways, Lebanon, N. H.

How NEA Improved its Air Taxi Program

Likes, dislikes aired at meeting with operators; agree on new rate plan, elimination of deposits.

NORTHEAST Airlines has demonstrated how an airline can improve relationships with air taxi operators in its area, while at the same time laying the groundwork for an increasing interchange of business.

Determined to do something about the lagging interest in the airline-air taxi program, NEA recently held a conference with seven New England members of National Air Taxi Conference, at which methods of increasing business were discussed and likes and dislikes were aired.

Results were surprising, and may prove to be business-getters that will spread to other areas. Those in attendance felt that the meeting, presided over by R. L. Turner, NEA vice president-sales, was the only way in which the following results could have been attained:

- * **Taxi operators agreed** to have NEA show in its April timetable a per-passenger taxi rate to certain points, rather than a per-aircraft-mile rate.

- * **NEA will no longer collect advance deposits on taxi flights.**

- * **NEA outlined** its program for giving more publicity to air taxi.

A per-passenger rate is a radical de-

parture from present ways of doing business. Taxi operators now generally quote a per-mile rate. Thus, one passenger might pay 15c per mile for a Bonanza; three people could split it at 5c apiece. NEA officials explained that the latter practice has been one of the biggest bottlenecks reservations-wise. Busy reservationists have trouble trying to explain to passengers how the rate may vary, they said.

Rate Setting

Turner emphasized that the per-passenger rate will be set by the taxi operator himself, and will be as low as he cares to gamble on. In addition to publishing these rates in April, NEA timetables will also carry per-plane rates to points to which operators don't wish to establish individual fares. And if the NATC meeting on Mar. 4 rules that members' rates will be set up nationwide by zones, NEA will go along with the ruling.

NEA officials were surprised that operators weren't interested in having the deposit collected (present practice is for an airline to collect a \$10 deposit when a passenger asks for a taxi reservation). Turner said the new system

should work better than the old, in which collection has become complicated, primarily on the question of whether or not federal tax applies as part of the deposit, and also on the question of refunds.

Where NEA sells air taxi on a per-passenger rate, it will collect the full amount and remit the tax to the government, as it does on interline tickets.

During the coming months, NEA will:

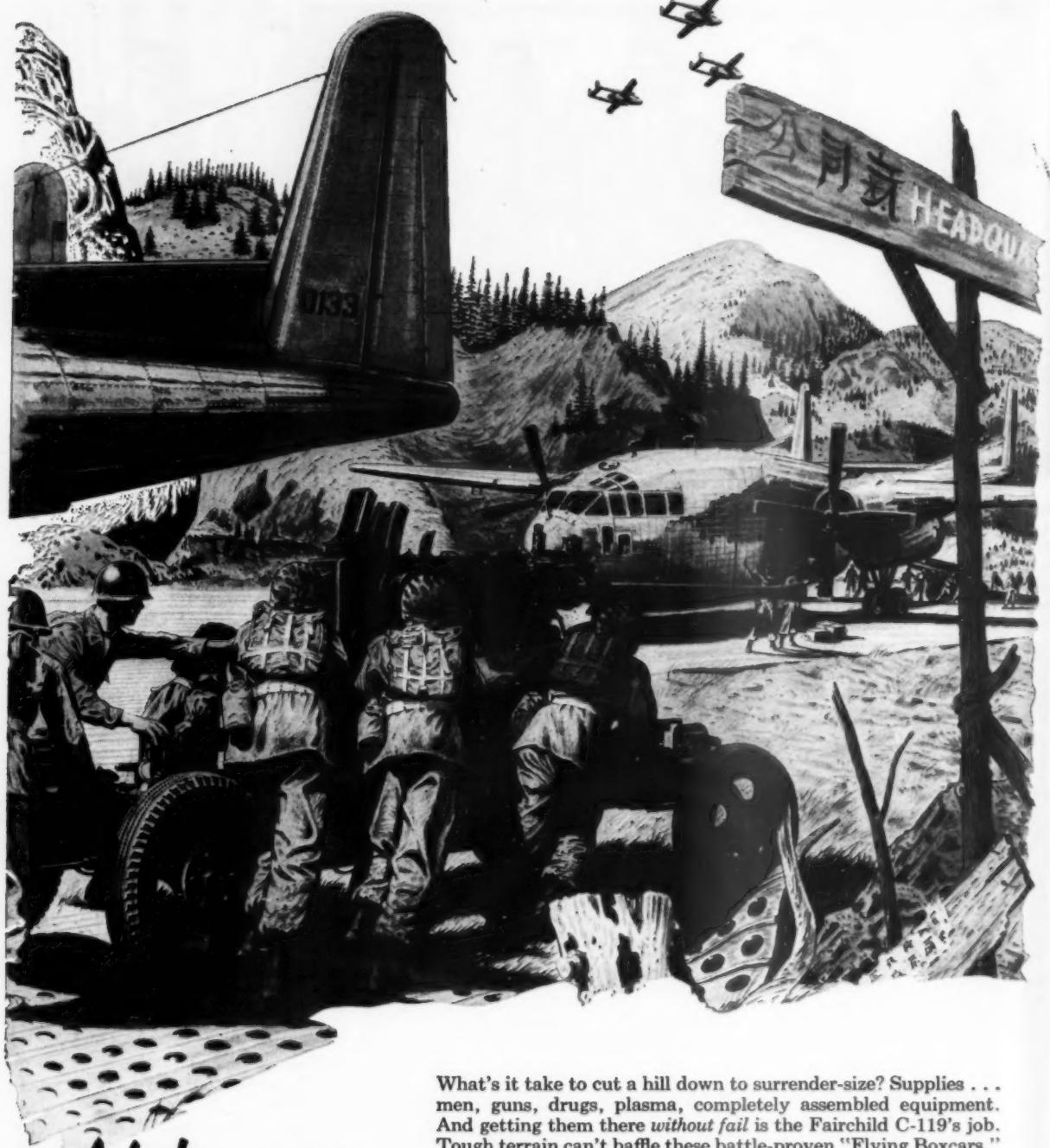
- * **Expand its timetable** to list taxi operators, off-line points, time, cost, etc.

- * **Take more space** in Official Airline Guide to give similar information.

- * **Mention taxi service** in its newspaper ads.

NEA some months ago issued a guide showing leading resort areas, NEA's nearest stop, and available taxi service. This guide, Turner said, was partly responsible for the fact that 150 people were flown into one off-line area in Maine alone. John Van Arsdale, of Cape Cod Flying Service, said that last summer he flew almost regular schedules Provincetown-Boston, connecting with NEA and other lines. Increased publicity can extend this business to other areas, Turner stated.

Taxi operators present pointed to a great need for education of the airlines' airport personnel regarding the value of taxi service.



Airborne **BELLYFUL** for **HILL 26**

What's it take to cut a hill down to surrender-size? Supplies . . . men, guns, drugs, plasma, completely assembled equipment. And getting them there *without fail* is the Fairchild C-119's job. Tough terrain can't baffle these battle-proven "Flying Boxcars." They deliver in a quagmire or a tangled jungle, by parachute or on iron matted runways.

Fairchild designed these rugged aircraft for speed, stamina, versatility. Tribute to Fairchild's engineering skill is that the C-119 "Flying Boxcar" is the number one all-purpose transport for military airlift operations of the U. N. forces in Korea, and for other airlift operations in Europe and the United States.

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Other Divisions: Engine, Guided Missiles and Stratos Divisions, Farmingdale, N.Y.

AMERICAN AVIATION

Civil Aeronautics Board

New Southern Interchange Approved

Close 3-2 vote okays EAL-Braniff-TWA service between Florida and California.

A new interchange service by Eastern Air Lines, Braniff Airways and TWA across the southern transcontinental route between Florida and California has been authorized by the Civil Aeronautics Board. Outcome of a highly-controversial proceeding, the award was by a close 3-2 vote of CAB members and creates direct competition for a currently-operated interchange by National Airlines, Delta Air Lines and American Airlines.

New services will be between Miami and San Francisco via Tampa, Houston, Dallas, Ft. Worth, Amarillo and Phoenix. To add directness, CAB also eliminated circuitous features of Eastern's Miami-Houston route to permit direct trans-Gulf operations in connection with through interchange flights.

'Effective Competition'

Board Members Josh Lee, Joseph P. Adams and Chan Gurney formed the majority in authorizing the new service. They claimed a substantial traffic potential and improved service to the public justified the award. Also, they added, echoing an opinion by Lee when the National-Delta-American service was authorized, it will provide "needed effective competition" for American west of Dallas.

To arguments of diversion, the majority indicated that detrimental results, such as increased mail pay need, are insufficient to outweigh the benefits that will accrue from the new through service.

Board Chairman Donald W. Nyrop and Vice-Chairman Oswald Ryan disagreed on the premise that the award is simply a new route award which is "uneconomical from whatever standpoint it is viewed." They accused the majority of returning to the "so-called doctrine of competition for competition's sake." It cannot, they said, be reconciled with the current program of CAB which seeks through mergers, consolidations and route suspensions to reduce the airmail subsidies."

Inauguration of the new service depends on results developed during a 10-day waiting period granted for

submission of new interests by parties involved in the case. Meanwhile, necessary agreements have been filed with CAB.

CAL-MCA Merger Dropped

Investigation aimed at merging Continental Air Lines and Mid-Continent Airlines has been dropped by CAB in light of the voluntary merger agreement reached by Mid-Continent and Braniff Airways. Once looked on by Continental as a beneficial move, the merger with Mid-Continent was started by CAB last October, but progressed very little. CAL officials said they were surprised by the MCA-Braniff announcement and have no merger plans for the time being. CAB said it dropped the investigation to permit prompt disposition of the Braniff-MCA deal which has been set down for hearings on Mar. 19.

Atlantic Charter Policy

Trans-Atlantic charter operations this summer will be governed by the same CAB policy considerations in effect in 1951. Generally, they are designed to protect tourist services which CAB hoped would start last year but which will be inaugurated on May 1. Charter operations will be limited largely to those of scheduled U. S. and foreign trans-Atlantic carriers with non-scheduled lines and so-called "passenger forwarders" excluded. In previous years the "forwarders", technically called indirect carriers, arranged numerous trans-Atlantic charters on non-scheduled airlines under CAB exemptions. This year, CAB says, no exemptions will be issued.

Decisions

• Pan American and TWA authorized to suspend trans-Atlantic service temporarily at Philadelphia because of lack of patronage and uneconomic operating results. Board member Joseph P.

Adams dissented with claim that suspension is not in the public interest.

• Capital/Braniff interchange agreement, which involved for the first time the over-flying of junction points, shelved by CAB because both lines are heavily involved in merger proceedings and "other complicating factors." Agreement was for service between the northeast and southwest via Memphis.

• American Airlines' proposal to carry first class passengers between New York and Washington on through coach flights to and from the west coast approved by narrow 3-2 vote. Approval was reversal of earlier suspension ruling when Board thought "unjust discrimination" may be involved. Members Lee and Adams dissented.

• Pan American World Airways awarded additional back mail pay of about \$1,400,000 for Alaska operations conducted during 5½ year period ended June 30, 1951. Total mail pay for period for Alaska service was \$8,683,000. Current rates established in same decision amount to \$1,149,000 annually.

Examiner's Report

Flying Tiger Lines' proposal to engage in passenger charter operations was recommended for denial by Examiner Curtis C. Henderson on grounds that FTL, certificated only for all-cargo operations, does not possess legal authority for passenger service. Henderson also urged that a Resort Airlines' proposal for passenger charters be turned down because its certificate is limited to all-expense escorted tours.

CAB CALENDAR

March 10—Hearing in West Coast Airlines-Empire Air Lines Merger Case. Washington. (Docket 5220).

March 4—Oral argument before the Board in Chicago-Mexico City Interchange Case (C&S and PAA); Washington (Docket 4863).

March 11—Oral argument before the Board in New York-Balboa Through Service Proceeding; Washington (Docket 4882).

March 19—Hearing in Braniff-Mid-Continent Merger Case; Washington (Docket 5376).

April 14—Hearing in New England-Southern States Merger Investigation; Washington (Docket 5124 et al.).

Airline Commentary

By Eric Bramley



FROM George Lambert, TWA's district sales manager in Paris, comes the story of how a TWA cashier solved his housing problem. Seems that this cashier, Walter Steffen, a young Swiss who was reared in France, married Georgette Danger, and in due course started raising a family. There being an acute housing shortage, Steffen had to do some powerful looking around.

He found just the thing—a 17th Century building in the heart of the Latin Quarter near Notre Dame which had originally been the town house of one Field Marshal Count Carvesin, who served under Louis XIV.

Seems that this old house had been turned into a hotel in 1910 and was in pretty bad shape. Walter and Georgette took it over and on Walter's days off he painted, cleaned and scrubbed. In time it was named the Hotel du Lys, 23 rue Serpente, near the Place Ste. Michelle.

Today Walter and his wife are proud hotel operators and he continues to be TWA cashier. In addition to a lot of TWA patronage, the hotel has become known to Irish and English tourists who are limited in traveling funds. The Hotel du Lys is a One Star hotel in the French hotel book, meaning it is warm, comfortable, and medium priced.

The moral is—if you can't find a place to live, buy a hotel and get your living quarters free with dividends.

We pass on a warning that's going around the industry: the free-loaders are at work among the airlines. These individuals are making increasing use of a device by which they can travel domestically with more than the allowable 40 lbs. of baggage without paying for the excess. Here's how it's worked:

One of the free loaders will buy a ticket from Bermuda to New York, for example, and present it to a domestic airline as evidence of his prerogative to travel with 66 lbs. of baggage (the international limit). After traveling around the U. S., as a continuation of his "trip from Bermuda," he turns in his Bermuda ticket, which has never been used, for refund.

Some of the airlines have become increasingly aware of the practice, and want to try to take steps through their tariff committee to correct it.

Congratulations to American Airlines on a smart newspaper ad. It looks like a grocery ad—coffee 19c per lb., butter 27c per lb., steaks 25c per lb. These are 1933 prices, much higher today, the ad says, pointing out that over the same period AA's regular fare dropped from 5.9c to 5.6c per mile, with Airtourist fare at 4.1c. Air travel, it adds, is "today's best buy." Very smart advertising.

An interesting commentary on the effectiveness of non-scheduled airline advertising comes from Nicholas Cariño, vice president of Safeway Skycoach Airlines Terminal Inc., Chicago. Mr. Cariño, whose agency handles three non-skeds, says that although price advertising is essential for these carriers, there's one medium that brings excellent results without any mention of fare. This is the classified section of the Chicago telephone directory.

The agency (ads have been in its name) has appeared in the directory under three headings: air travel ticket agencies, airline companies, and travel bureaus. Cariño says that the agency has made a practice of asking each ticket buyer how he happened to hear of Safeway Skycoach.

"From the replies we get, I'd estimate that these listings in the yellow pages bring in an average of four to five new passengers a day," he says. "On a yearly basis, use of the directory may produce about one-fifth of our sales."

Seems that they have a small goldmine in those yellow pages.

Letters

(Continued from page 12)

February dismiss the idea of clutter from precipitation. Precipitation heavy enough to cause clutter on the PAR scopes is of such intensity that no airline plane could be expected to be making an approach through it.

The probable course of events, based on information then available, was qualified with the comment, "Only time will tell."—Ed.)

'En Route' Fans

To The Editor:

Many of us at our Norfolk station, although we enjoy AMERICAN AVIATION in its entirety, are particularly fond of your own travel experiences which are so ably written in each issue.

Your chapter in the Feb. 4 issue in regard to the types of music beamed at the Yugoslavs in comparison to our wretched radio fare falls into such personal agreement that I cannot help but submit my heartiest Amen.

We eagerly await your next edition. I am sure you would enjoy knowing that you have many local fans.

ROBERT E. CARLIN
District Sales Manager
National Airlines
Norfolk, Va.

First Chapel?

To The Editor:

Harry Gibbons, of our Traffic Department, has just pointed out to me that in the Feb. 4 issue of AMERICAN AVIATION the item that the first chapel to be located at an airport has been opened at Boston may not be quite correct.

He remembers having gone to mass at the chapel at Shannon as long ago as 1948, and that the chapel was located on the field near the old Lockheed section.

S. RALPH COHEN
Public Relations Officer
International Air Transport Association

(What say, Shannon Airport, true or false?—Ed.)

Compliment

To The Editor:

I should like to compliment your editorial staff on what I consider to be a very fine digest of my IAS paper. I got a tremendous satisfaction out of the whole Feb. 18 issue.

CAPT. WILLIAM W. MOSS
Pan American World Airways

Obituary

Nathaniel F. Silsbee

Nathaniel F. Silsbee, 56, executive secretary of the Corporation Aircraft Owners Association, died unexpectedly in a Washington hospital on February 15 after a virus infection.

Silsbee served in World War II as head of the information, education and research sections of the Air Force's public relations organization. After the war he was with *Skyways* and *Aero Digest* before joining CAOA.

Airline People

—ADMINISTRATIVE—

R. Paul Weesner elected president of Resort Airlines, certificated all-expense air tour carrier. For the past year Weesner had been executive vice president and general manager of the line and before joining Resort he had been executive vice president of Lake Central Airlines.

John T. Shannon, Pan American-Grace Airways' vice president-traffic and sales, has taken an unlimited leave of absence from the company. Shannon has been with Panagra over 21 years.

Edward O. Rodgers, former secretary to Sen. Carl Hayden (D., Ariz.) has become assistant to the president of the Air Transport Association. His particular duties will be responsibility for public affairs programs. Rodgers succeeds Charles Roggi, resigned.



Sullivan

M. E. Sullivan, Western Air Lines' director of traffic, elected national chairman of the passenger tariff and rates committee of ATA's Air Traffic Conference. A. E. Deshell of American Airlines became vice-chairman. L. A. Person, traffic manager for Braniff Airways, was outgoing chairman.

OPERATIONS-MAINTENANCE

Kenneth Gilchrist, former lead communications agent in Los Angeles for American Airlines, has resigned from the company to go with NBC's Hollywood television station KNBH.

John P. Houghton, who was corporation secretary for Air Cargo, Inc., before being ordered to active duty early this year as an Air Force major, has been named chief of the Military Air Transport Service's transport section in Washington, D. C.

Five new appointments by American Airlines in its Dallas operations department are: Thomas H. Rubel named chief agent-ramp; Jesse R. Willis, chief agent-ticket; Kenneth R. Blessing, chief agent-airfreight; M. A. Barker transferred from Cleveland to become fleet service chief; and Norman B. Jimmerson promoted to passenger service manager.

—TRAFFIC & SALES—

Juan Homs, Jr., Pan American World Airways' traffic manager in Buenos Aires for the past three years, has been transferred to newly-created post of regional traffic and sales manager in Lima, Peru. Homs' new duties will include responsibility for liaison representation between Pan Am. and its affiliate Panagra.



FOUR VETERAN PILOTS of Continental Air Lines have been promoted to executive positions. Left to right, J. F. Weiler, 15-year veteran who has been chief pilot, was named director of flying; Harry D. Taneyhill, formerly assistant chief pilot, named chief pilot of El Paso division; Capts. R. S. Grisby and George E. Cramp will alternate at Denver headquarters as assistant chief pilot.

Fred F. Plimpton has been named to replace Homs in Buenos Aires as Pan Am's traffic and sales manager for Argentina. Plimpton transfers from the post of general sales manager in Beirut, Lebanon.

J. Quinn Collins, formerly Northwest Airlines' sales manager in Pittsburgh, has been named to head the company's newly-created military sales division.

Edward L. Morgan, Chester H. Chiodo and G. L. Bereman have been named by Slick Airways to three newly-established division traffic manager posts. In Slick's expansion of field supervisory personnel, Morgan is to head the western division at Burbank; Chiodo, eastern division at New York, and Bereman, central division, at Chicago.



Collins

George A. Cox, regional reservation manager at London for KLM Royal Dutch Airlines, is now touring this country for the purpose of studying reservations techniques of U. S. air carriers.



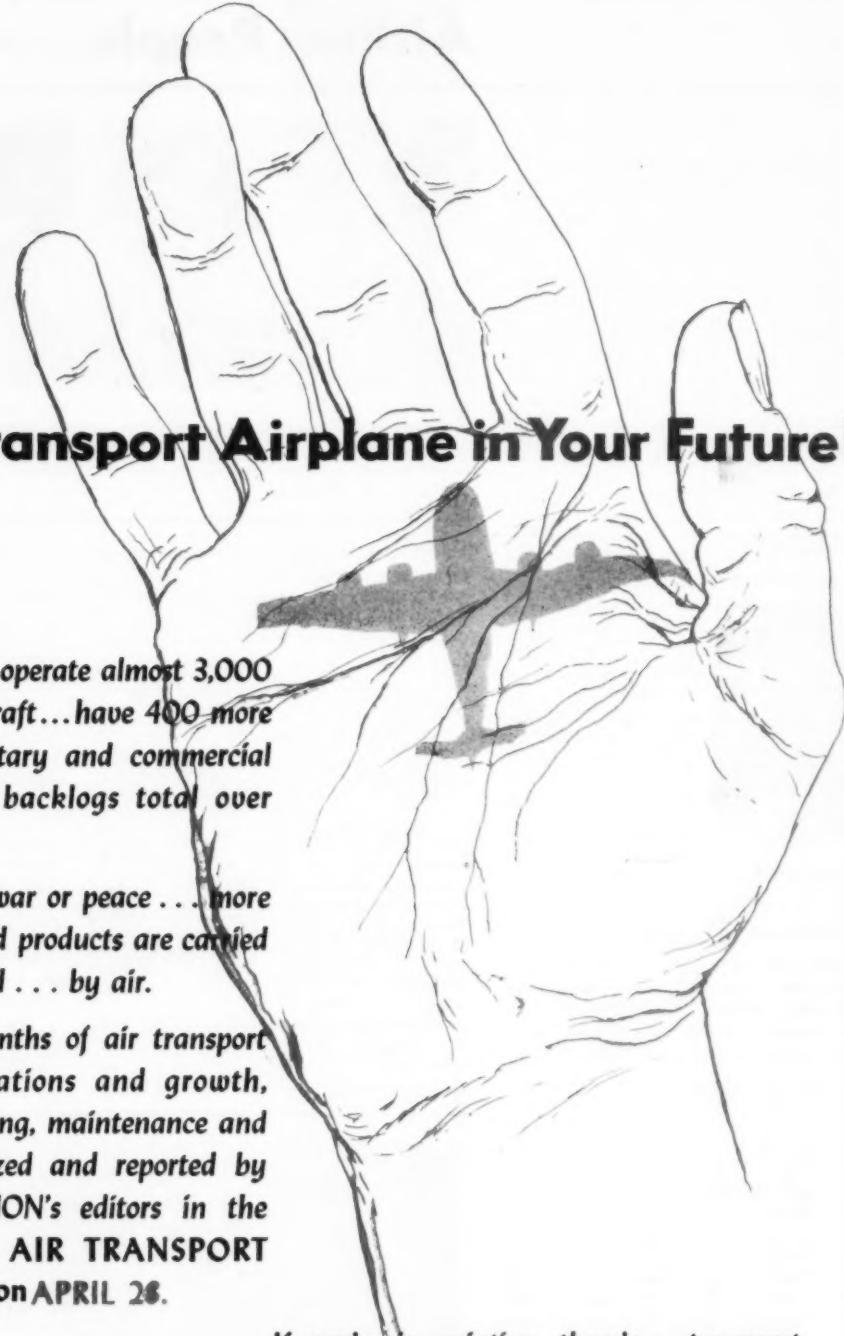
Fisher

Charles S. Fisher promoted by Western Air Lines from Seattle district sales manager to director of flight schedules. Neil S. Stewart transferred as district sales manager at Tacoma to Seattle . . . Robert J. Murray, Hollywood sales manager for Western, appointed to the new position of eastern interline sales manager. He is succeeded in Hollywood by Mason Mallory, formerly district sales manager in Minneapolis.

Philip Siefert is now Miami station traffic manager for Pan American World Airways . . . Hector Cruz has joined the special services staff at Miami.



REPRESENTATIVES OF THE MILITARY BUREAU of the Air Transport Association, which handles movement of thousands of military personnel on chartered planes of the scheduled airlines, are shown here with M. F. Redfern, executive secretary of the Air Traffic Conference. Left to right, Sam Ronnie, C. B. Newman, Redfern, Robert Minogue, Frank Macklin, head of the bureau, and Richard Showalter.



There's A Transport Airplane in Your Future!

The world's airlines operate almost 3,000 American-built aircraft... have 400 more on order now. Military and commercial transport aircraft backlog total over \$1,060,000,000.

Year after year... war or peace... more and more people and products are carried around a busy world... by air.

The past twelve months of air transport history... in operations and growth, equipment, engineering, maintenance and methods, are analyzed and reported by AMERICAN AVIATION's editors in the **THIRD ANNUAL AIR TRANSPORT PROGRESS ISSUE** on **APRIL 26**.

If you're in aviation, there's a transport airplane in your future. If you sell anything to aviation, your advertising belongs in this great issue.

Plate deadline April 14 Four-color deadline April 7





LARGEST STEEL-SPAN hangars in the world, above, make up three of Idlewild's five. Each hangar has a floor space of 65,300 square feet or about one and a half acres.

Year of Expansion Ahead for Idlewild

Newark closing, Atlantic coach flights may tax field's terminal area facilities; slow expansion long-range plan.

WITH the temporary closing of Newark Airport, and the planned inauguration of international coach service on May 1, traffic at New York's International Airport at Idlewild is slated for a sharp upswing.

In 1951, total plane movements were almost 100% over 1950 (see table) at the sprawling international terminal—as large as Manhattan Island from 42nd St. to the Battery. The 1952 increase will be even greater.

Difficulties may be encountered because Idlewild's present terminal area facilities have long been inadequate to handle any substantial increase in the number of passengers. Principally because of this, only four of the seven runways ready and able to accommodate traffic are currently in use.

Master Plan

To evaluate the capacity of New York International Airport to accommodate the thousands of passengers and tons of freight which will pass through it in the coming years, AMERICAN AVIATION recently reviewed the big airport's prospects. Survey of the situation showed that Idlewild is expanding to meet rising international traffic demands, but that expansion, based upon an orderly series of improvements and additions, is to proceed slowly according to a master plan now being worked out between the airlines and the Port of New York Authority.

An index of how large the airport could grow is the fact that it is now equipped with five hangars, while a rough estimate calls for approximately 40 as an ultimate number.

immediately to 1,020,000 gallons and when completed to over 4,000,000.

• A permanent terminal building for which architectural design contract has been awarded. Plans call for constructing the new terminal around the tower, making the two an integral structure.

While the Port of New York Authority is in possession of proposed plans detailing further new construction at Idlewild and outlining facilities to be installed as far away as 1965, it is currently operating under an interim agreement with the airlines which makes all future plans subject to many possible changes.

Dewey Agreement

This interim plan, known as the Dewey agreement, was signed Aug. 5, 1949, breaking a deadlock which had existed for two years between the Port of New York Authority and some international airlines. It cleared the way for fuller utilization of New York International Airport. Disagreement between the Port Authority and the carriers stemmed in part from the fact that the airlines' contracts had been made with the city of New York. When the Port Authority leased Idlewild from the city in 1947, the economic situation of the nation had changed, and the Port Authority held that the contracts were unfair to the lessor. Compromise measures offered by the airlines were not acceptable to the Port Authority.

The Dewey agreement, bringing the carriers and the Port Authority to

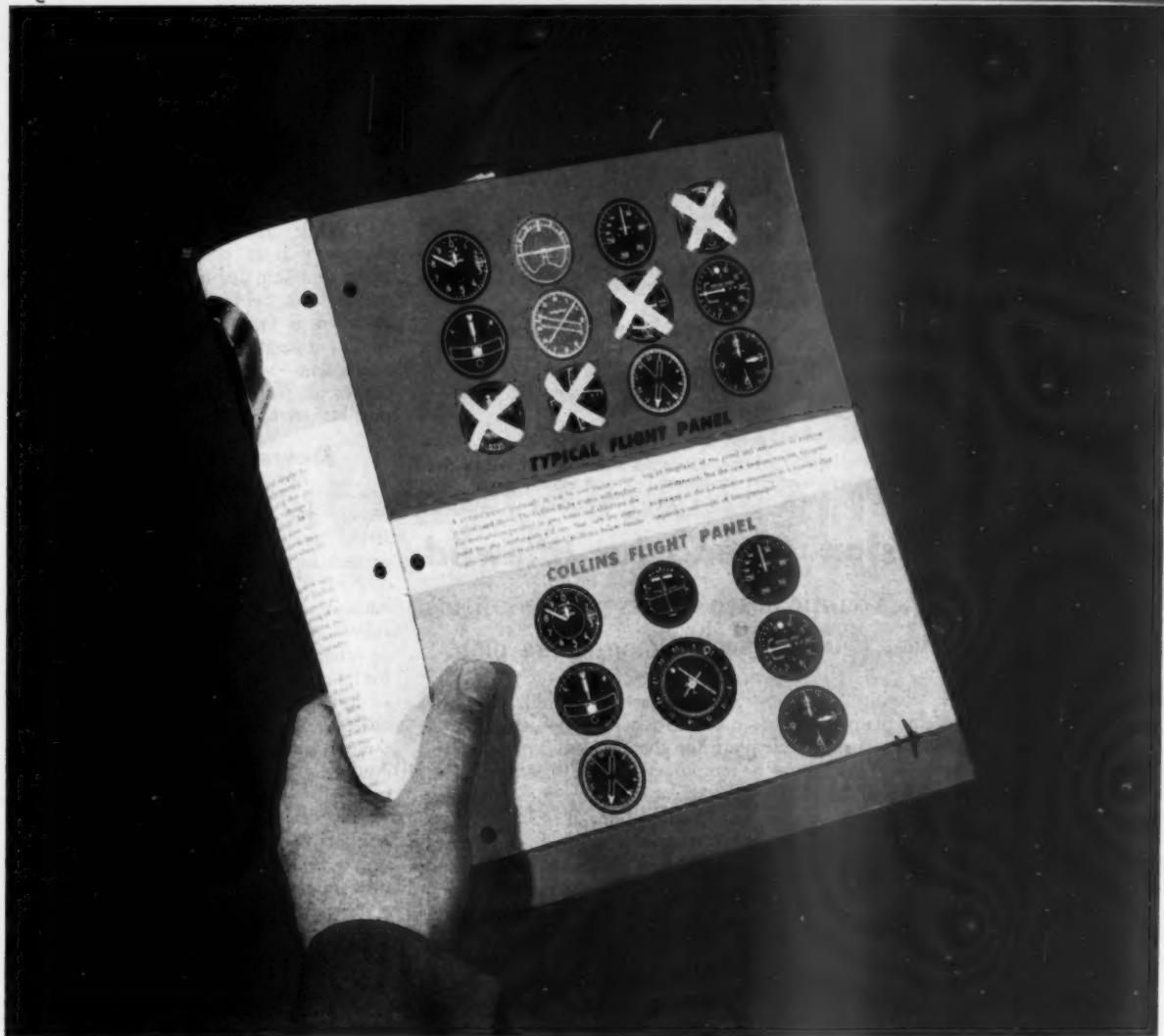
Traffic Report New York International Airport

	1951	1950	1951	1950
Plane Movements (No.)	Dec. 1951	Dec. 1950	Jan.-Dec.	Jan.-Dec.
Scheduled domestic carriers	828	415	8,320	5,603
Scheduled overseas carriers	2,021	643	19,036	9,681
Non-scheduled & contract carriers	154	81	1,744	1,078
Air taxis and charters *	77	1	516	1
Corporate aircraft	188	81	2,853	1,561
Private aircraft	17	11	327	410
Military & governmental aircraft	88	106	1,617	942
Total Plane Movements	3,373	1,337	34,413	19,275
<hr/>				
Passenger Traffic (No.)				
Scheduled, non-scheduled and contract carriers	71,859	29,993	779,918	394,344
<hr/>				
Cargo Traffic (Pounds)				
Scheduled, non-scheduled, and contract carriers				
Mail	1,661,634	799,136	9,850,256	5,540,213
Express	3,526,540	1,727,485	32,186,180	15,620,692
Total Cargo Traffic	5,188,174	2,526,621	42,036,436	21,160,905

* Included with Contract Carriers prior to August 1, 1951.

Note: Plane movements, passengers, mail and cargo based on enplaned and deplaned traffic.

Source: Port of New York Authority.



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5-190

● All operators of airline and business aircraft should have the information contained in this pamphlet. It illustrates and describes the operation of the new Collins flight system, which gives the pilot a clear pictorial presentation, on fewer instruments, of all the information he needs for precise ILS approach flying and VOR navigation. Please write us for it on your business stationery.

For better ILS approaches, it's . . .

COLLINS RADIO COMPANY, Cedar Rapids, Iowa

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1937 Irving Blvd., DALLAS 2

2700 W. Olive Ave., BURBANK



gether for the first time, called for the drawing up of a final and definitive agreement between the two. When this has been drawn up and executed, it will spell out details of future Idlewild operation. It will encompass details of leasing arrangements and accounting methods to be used. Meanwhile, development is progressing in accordance with the Dewey agreement.

Some Construction

Since the breaking of the deadlock, some permanent construction has gone ahead. In June, 1950, the three largest steel-span hangars in the world, costing \$9,000,000, were dedicated. Each hangar, 300 by 218 feet, has floor space of 65,300 square feet or about one and a half acres. Additional area of about 108,000 square feet of office and shop space is achieved by two-story lean-tos at the ends of the hangars. Each hangar can handle four Stratocruisers or two Lockheed Constellations, one Douglas DC-6, one Martin 202, and one Convair 240. These three hangars are in addition to two smaller ones built by the city prior to the leasing of the airport by the Port Authority.

Other permanent structure is a three-story, air-conditioned Federal building, built at a cost of \$5,000,000, which houses CAA, CAB, and weather bureau offices.

Since beginning of construction of the airport in April, 1942, the city of New York has spent \$60 million on the project, with the Port of New York Authority spending \$100 million. Work began when the city contracted for the placing of a hydraulic fill over the marshy tidelands on the site of Idlewild Golf Course. While the airport is now nine times the size of La Guardia, it was originally envisioned as an 1,100-acre airport—twice the size of La Guardia.

Sand

During early construction, enough sand was pumped out of Jamaica Bay in the fill-in to cover Manhattan Island with nine feet of it. When flight operations began, the sand presented enormous problems. It got into aircraft engines, reduced visibility, and made night operations difficult. The marshy substructure, moreover, required extensive draining and showed a tendency to wash away. This problem was lessened by the planting of 4,300 acres of beach grass, which held the sand down and made the drainage easier. Even now, drainage problems are considerable.

Runways in use are from 6,000 to 8,200 feet long, all 200 feet wide. Central 200-foot strips are of concrete and the

PROFIT AND LOSS STATEMENT EL PASO, TEXAS, INTERNATIONAL AIRPORT

Sales	Month of December	10-Month Period Ending Dec. 31, 1951
Gasoline	\$53,192.22	\$448,917.72
Oil	1,868.40	15,474.65
Miscellaneous	—0—	51.01
Total	\$55,060.62	\$464,444.38
Cost of Sales		
Gasoline	\$39,246.74	\$336,939.49
Oil	934.20	8,554.24
Total	40,180.94	345,493.73
Profit on Sales	\$14,879.68	\$118,950.65
Other Revenues		
Rents: Administration bldg	\$ 4,323.11	\$ 38,261.00
Hangars	2,042.00	20,462.51
Operating fees—schools	308.33	1,649.98
Landing fees	1,885.00	18,750.00
Ground transportation	925.26	8,025.26
Military refueling contract	8,324.32	33,741.66
Continental Airlines refueling fees	273.24	2,050.16
Miscellaneous	1,490.93	15,394.03
Total	19,572.19	138,334.60
Gross Operating Profit	\$34,451.87	\$255,285.25
Operating Expenses		
Salaries	\$ 7,852.36	\$ 70,876.24
Utilities	1,655.67	14,498.75
Supplies and repairs	1,565.17	16,018.23
Insurance	309.65	1,429.00
Miscellaneous budget expense	537.42	2,800.11
Total	11,920.27	105,622.33
Profit Before Depreciation	\$22,531.60	\$149,662.92
Depreciation	6,616.51	66,130.15
Net Operating Profit	\$15,915.09	\$83,532.77
Miscellaneous Revenues		
Sale & lease of gov't. donated property	121.50	2,760.25
Net profit	\$16,036.59	\$86,293.02

El Paso Airport Climbs into the Black

The El Paso (Tex.) International Airport, which operated at a \$22,570 loss in fiscal 1948, its first year of operation, and reached a point of sustenance including depreciation in 1950, achieved a net profit of \$86,293 for the ten-month period ending Dec. 31, 1951. (See accompanying table.) This net profit includes \$66,130 allowed for depreciation for the period.

Management consultant section of CAA's Fourth Region Airports Division, which has worked closely with El Paso airport personnel in an advisory capacity, reports that "progressive management" is largely responsible for the airport's healthy fiscal condition. Charles B. Moore, manager of El Paso International, assumed his duties in September, 1949.

outer 50 feet are of blacktop asphalt. The instrument runway, No. 4, which is equipped with both ILS and GCA equipment, uses slope-line approach lighting installed on a pier running out into Jamaica Bay. Runway No. 7 has similar equipment. The thresholds of these two runways are equipped with red filters and green lights.

Vast size of the field, which necessitated the 150-foot control tower, would seem to require surface detection equipment as an aid to the controllers. A model layout of the tower's equipment includes space for surface detection gear, but no decision has been made on whether or not this equipment is near enough its final form to permit inclu-

sion. CAA tower personnel report that, while the array of equipment to be used in the new tower installation will not include any innovations, it is expected to be one of the most complete in the world.

Anderson Heads ATS Flight Schools Group

E. Merritt Anderson, president of Anderson Air Activities, Milwaukee, has been elected chairman of the Contract Flight Schools Committee of the Aeronautical Training Society.

Anderson, who also operates an Air Force basic contract flight school at Malden Air Base, Malden, Mo.



GRUMMAN MALLARD

Business is going up!

Busy executives are taking to the air.

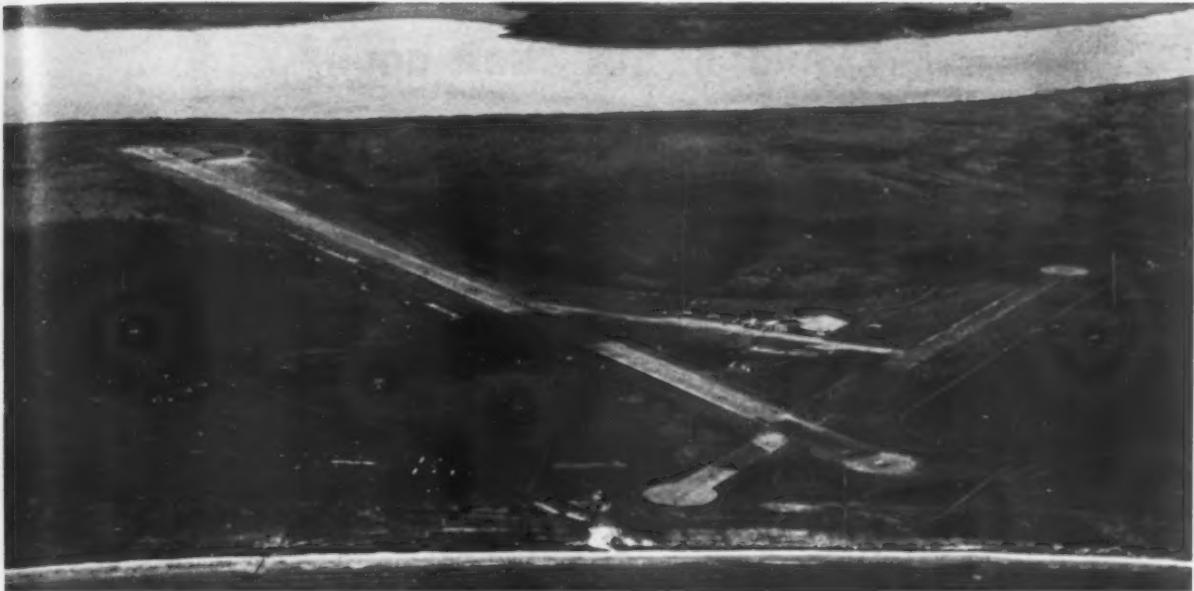
More and more of them are flying their own planes or are using company planes to go places faster, more comfortably, entirely free of schedules.

And in more than 600 airports they look to the *Esso Wings* for quality and dependability in aviation products and service.

Many of them also are finding new convenience in the *Esso Credit Card*, honored from coast to coast.

Esso Aviation Products are chosen by many leading airlines, aircraft and engine builders. Look for the famous *Esso Wings*—sure sign of quality and service!





APPROACH TO ENTEBBE, capital of Uganda, is unobstructed for more than 100 miles.

Jet Transport Airfield Opens in Africa

BOAC to use Entebbe for Comets on London-Johannesburg runs; one runway 9,900 feet.

WHAT is described as the finest airport in Africa has opened at Entebbe, capital of the British protectorate of Uganda, at the upper end of Lake Victoria.

It is probably the finest airport in the world specifically designed for commercial jet transport operations. It is a vital stop on north-south air services between South Africa and Europe.

Only a very few years ago Entebbe was in what was known as "Darkest Africa." It is 317 air miles northwest of Nairobi, capital of Kenya Colony. Its white population only now numbers about 300, and it has one hotel and no industry. It is twenty miles from the industrial center of Kampala, which has a railway to the coast, 800 miles away, and two trains per week.

Bitumen-Paved Runways

The new airport is located at Lat. 00 03' 00" N., and Long. 32 28' 00" E. It is 3,761 feet above sea level, and has two runways, one 5,400 by 150 feet, the other 9,900 by 200 feet. Both are paved with bitumen seal on laterite. Taxi strips are all 100 feet wide. A small grass airfield had been on the site for 25 years.

Full forecast service is available now at all times and the airport itself is fully open 24 hours a day. Customs, immigration and health services are available. All types of fuel, including kerosene, are

carried. HF, VHF, VHF/DF radio facilities and an MF beacon are in operation. Runway locator beacons, responder beacon, and radar thunderstorm locator are being installed.

No GCA has been provided because the worst tropical storm has never

closed the field for more than 30 minutes continuously, and because both the approaches to the long runway are unobstructed for more than 100 miles.

Considering the size and the facilities, the cost of \$1,400,000 is considered to be unusually low. The amount includes the cost of all buildings.

At the formal opening ceremonies some 40,000 attended, including thousands of Africans, many of whom had



LONGEST RUNWAY in Africa has a taxi-track loop at north-west end.



AIRPORT BUILDINGS at Entebbe, built on site of small grass airfield.



RECEPTION LOUNGE is spacious.

never seen an airplane close at hand before.

The passenger terminal has a restaurant, cocktail lounge and bar, and such facilities for transients as shower baths.

Sir Frank Whittle, designer of the gas turbine engine, made suggestions for the construction of the airport.

British Overseas Airways Corp. will use Entebbe for the deHavilland jet Comet when this airplane is placed in service between London and Johannesburg this year. Entebbe is also a hub for much regional air service by East African Airways and others. Normally it serves five aircraft per day, but in December, shortly after the opening, from 18 to 42 commercial airplanes a day used the field when Eastleigh Airport at Nairobi was flooded out.

Information and photographs about Entebbe Airport were furnished by Basil Clarke, now freelancing in London, who was connected with the Uganda project until its completion.



BAR, lounge, restaurant, offer refreshments to London-South Africa passengers.

OADR Authorizations

CAA's Office of Aviation Defense Requirements has granted authorizations for airport construction and improvement projects at the following locations (costs estimated):

Lambert-St. Louis Municipal, taxi marker lights, \$169,000.

San Francisco International, standby power plant, \$160,000.

Greater Ft. Worth International Airport, street lighting, \$160,000.

Beckley, W. Va., Raleigh County Memorial Airport, runway lighting and terminal building, \$140,000.

Muscatine, Iowa, Airport, drainage system and paving runway and taxiway, \$250,000.

Hazleton, Pa., Municipal, runway and field lighting, \$92,300; terminal, \$25,000.

Freeland, Mich., Tri-City Airport, terminal building, \$170,000.

Medford, Ore., Municipal Airport, terminal building, \$164,800.

Ft. Wayne, Ind., Baer Field, runway lighting system, \$36,000.

Fargo, N. D., Hector Airport, runway lighting, \$35,800.

Liberal, Kans., Municipal Airport, water supply, \$34,520.

Decatur, Ill., Municipal, water supply system, \$50,000.

Books

WINGS IN THE SUN. By William C. Lazarus. Illustrations and cover by Zack Mosley. 310 pp. Published by Tyn Cobb's Florida Press. Orlando, Florida.

Bill Lazarus has been working a long time on this history of aviation in Florida. It is astonishing how much air history the state has had. There were any number of early manufacturing ventures which have long since been forgotten. Airlines, too. A lot of familiar names appear time and time again throughout the book. The author, who has long been identified with Florida aviation, has performed a very valuable historical job. The book should be in all historical aeronautical libraries and anyone who has been remotely associated with aviation in Florida—even through the many air races down there—will find much of interest here.

PHYSICAL GEOGRAPHY. by Arthur N. Strahler. 436 pp. Published by John Wiley & Sons, New York, \$6.00.

The author is a Columbia University professor who has treated the earth itself as a basic science. Contents range from soils and tides to map reading, map projections, and climate. Those concerned with navigation and meteorology should find it rewarding.



Good News for Engineers

...LOCKHEED IN CALIFORNIA RAISES ENGINEERS' SALARIES

Lockheed Aircraft Corporation announces substantial salary increases for engineers in recognition of the importance and excellence of their work on both military and commercial aircraft. The increases, now in effect, make Lockheed engineers among the highest paid in the aircraft industry.

Engineers who join the Lockheed team will receive the benefits of these pay boosts.

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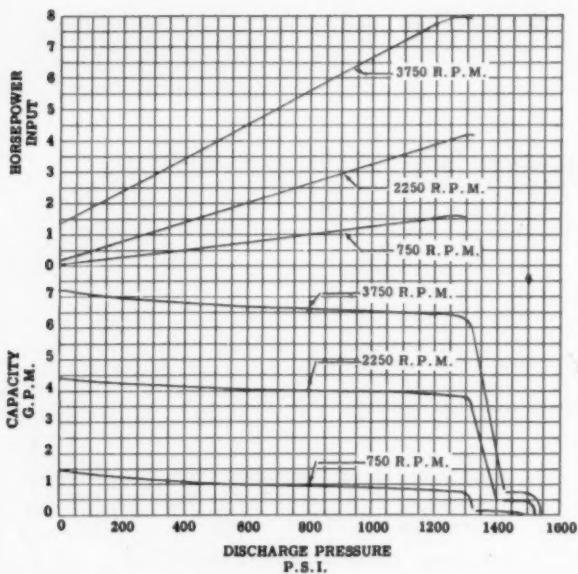
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Arthur Godfrey
Ben Franklin
March 10, 1948



H. D. "Herb" Stott
Colgate-Palmolive
at WINGS CLUB, N.Y.C.
March 10, 1948



H. J. "Jim" Stockman
Shell Oil Company
New York, N. Y.
March 10, 1948



Walter Krueger
Richard G. Krueger, Inc.
New York, N. Y.
March 10, 1948



John Alden Briggs
The Wings Club, Inc.
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March 10, 1948



R. M. "Rod" Hayden
Shell Oil Company
New York, N. Y.
March 10, 1948



H. Cree Stelling
Eastern Air Lines
at the WINGS CLUB, New York
March 10, 1948



David F. Anderson
Royal Air Force-R
at The WINGS CLUB, New York
March 10, 1948



J. L. "Jack" Fruin
United States Navy
at The WINGS CLUB, New York
March 10, 1948



W. "Bill" Van Dusen
at Wright Aeronautical Corp.
Wood-Ridge, N. J.
March 10, 1948



Palmyra Cadorin
Wright Aeronautical Corp.
Wood-Ridge, N. J.
March 10, 1948



H. F. "Jerry" Walsh
Australian National
at WAC, Wood-Ridge, N. J.
March 11, 1948



F. W. "Frank" Porter
Wright Aeronautical Corp.
Wood-Ridge, N. J.
March 15, 1948



G. R. "Red" Janas
Colonial Airlines
LaGuardia Field, N. Y.
March 15, 1948



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De Spagna Trucking Co.
New York, N. Y.
March 15, 1948



Alan Thompson
National City Bank
New York, N. Y.
March 15, 1948

BOEDY'S ALBUM



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March 15, 1948



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American Overseas
New York, N. Y.
March 16, 1948



B. G. "Ben" Wright
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March 16, 1948



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Newark-Washington
March 18, 1948



S. T. "Mac" McAlister
Penn-Central Airlines
Alexandria, Va.
March 18, 1948



Bernice Blair
American Airlines
Washington-Newark
March 18, 1948



W. R. "Bill" Hall (QB)
U. S. Aviation Underwriters
New York, N. Y.
March 24, 1948



Kendall K. "Ken" Hoyt
AERO DIGEST MAGAZINE
at WINGS CLUB, New York
March 24, 1948



Eileen Beebe
Trans World Airlines
Newark-Kansas City
March 29, 1948



Harry J. Summers
AiResearch Manufacturing Co.
March 30, 1948



A. B. "Tony" Favero
Western Air Lines
at Kansas City, Mo.
March 30, 1948



Frank W. Dulyn
Pratt & Whitney Aircraft
at Kansas City, Mo.
March 30, 1948



W. Frank Walker
Aircraft Mechanics
at Kansas City, Mo.
March 30, 1948



R. M. "Dick" Hoff (QB)
U. S. Rubber Aircraft Tires
at Kansas City, Mo.
March 30, 1948



R. K. "Bob" Christie
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at Kansas City, Mo.
March 30, 1948



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Pratt & Whitney Aircraft
at Kansas City, Mo.
March 30, 1948

UP THERE WITH THE BIG NAMES . . . CHAPTER NUMBER 11



De Luxe Panagra Planes Carry Monsanto Skydrol

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Skydrol: Reg. U. S. Pat. Off.

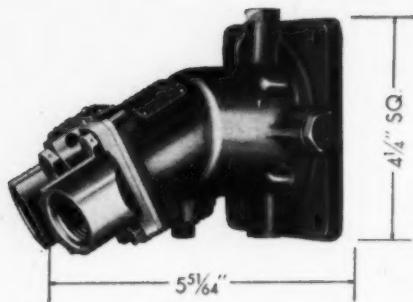
SKYDROL



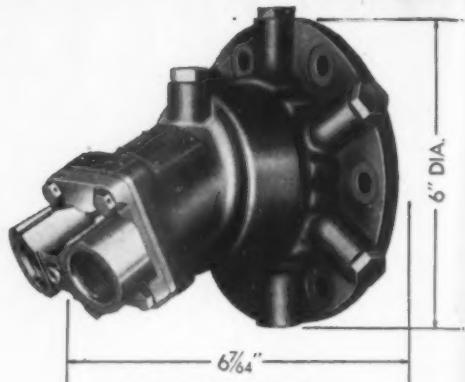
Photo courtesy Panagra (Pan American-Groce Airways Inc.)



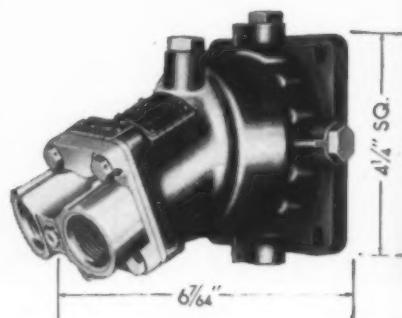
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Vickers Model PFA3Y-2
(AN-4149) 1.5 hp/lb



Vickers Model PFA3Z-2
(AN-6252-1) 1.7 hp/lb

These

VICKERS

Piston Type Pumps

CONSTANT DISPLACEMENT—3,000 PSI

have AN approval

The Vickers Constant Displacement Piston Type Hydraulic Pumps shown above have AN approval. They meet the 2 and 3 gallon size requirements of AN-P-11b. The use of these items may help speed up your aircraft production.

Reliability and long service life are important features of these pumps. Volumetric (96%) and over-all (92%) efficiencies are very high. Small size and extremely high horsepower to weight ratio at rated loads and speeds are as noted. As

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**Write for new Bulletin No. 4603 which describes these pumps in detail.*

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DIVISION OF THE SPERRY CORPORATION

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ENGINEERS AND BUILDERS OF OIL HYDRAULIC EQUIPMENT SINCE 1921

Wings of Yesterday

25 Years Ago

Pacific Air Transport Company was making plans to establish a 10-hour air passenger service between Portland and Los Angeles, using three-engine Fokker aircraft. PAT had been carrying passengers in small numbers in the Ryan M-1 mail planes employed over this route.

On March 5, 1927, President Coolidge presented to Shirley J. Short, Post Office air mail pilot, the Harmon Trophy for 1926, awarded by the American section of the International League of Aviators to the pilot who had done most during the year to demonstrate the reliability of the airplane as a means of transportation. Mr. Short was selected for this honor over Lt. Commander Richard Byrd and Lt. Floyd Bennett, first to fly over the North Pole in an airplane, because he flew 2,169 hours between July 1, 1923, and November 30, 1926, without serious mishap, on schedule air mail flights, night and day, in all kinds of weather, in various types of airplanes used by the Post Office Department.

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the bulletin board

Undisplayed Advertising: \$1.00 per line, minimum charge \$4.00. Cash with order. Estimate 30 capital letters and spaces per line; 40 small lower-case letters and spaces per line. Add two lines if Box Number is included in lieu of advertiser's name and address.

Displayed Advertising: \$10.00 per inch for less than 15 inches in one issue or in any 12-month period. For more than 15 inches, \$8.50 per inch; more than 30 inches, \$8.00; more than 60 inches, \$7.50; more than 90 inches, \$7.00; more than 120 inches, \$6.50. Space units up to full pages accepted in this section for classified advertising.

Forms close 20 days preceding publication date. Address all correspondence to Classified Advertising Department, AMERICAN AVIATION PUBLICATIONS, 1025 Vermont Ave., N. W., Washington 5, D. C.

HELP WANTED

WANTED—Local Service Airline has two openings: (1) Experienced Traffic Man. (2) Experienced Sales Manager. Give complete information. Write Box 751, AMERICAN AVIATION Magazine, 1025 Vermont Ave., N. W., Washington 5, D. C.

MECHANIC: Licensed A&E with several years DC-3 experience. Supply and stockroom background also preferred. Unmarried. For excellent position with small overseas airline. Reply in detail to Box 755 AMERICAN AVIATION Magazine, 1025 Vermont Ave., N. W., Washington 5, D. C.

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Commercial, single- and multi-eng. land, instrument, experienced Beech, DC-3, DC-4 pilot. 4 years exper. fit, test and demonstration. 3 years sales exp. Knowledge Latin American customs, people, and language. Age 30, married, willing relocate dom. or foreign. Write Box No. 761, AMERICAN AVIATION Magazine, 1025 Vermont Ave., Washington 5, D. C.

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Lockheed Lodestar Wing Panels, brand new, in original crates. Guaranteed free of rust or corrosion. \$1,500 each, F.O.B. Harrisburg, Penna.

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FOR SALE

Douglas C-47 Aircraft in excellent condition. Write Master Equipment Company, 907 Frontier Avenue, Cheyenne, Wyoming.

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Here is more about my trip to Yugoslavia last fall.

Split. The airport for the city of Split on the Dalmatian coast of Yugoslavia is 24 miles inland in a valley separated from the coast by a mountain range. The pass through which the unpaved road goes must be about 3,000 feet high.

Because the climb is much greater on the coastal side, the airport bus takes two hours outbound to the field, and only 1½ hours inbound to the city. These schedules are subject to change without notice, however. Anything can happen in Yugoslavia and often does.

Flying to Split in a DC-3 was just as routine as flying from Beaville to Houston or Tucumcari to Midland-Odessa or Toledo to Chicago. But once you're on the ground at Split, you move back into history.

The airfield is just a long unpaved strip with rock foundation, with a good-sized mountain at one end and hills at the other. But it's okay for a DC-3. The area is quite treeless and the mountains are barren but there is farming in the valley and the rest of the area is used for grazing by sheep and cattle. It's quite pleasant and the air is good.

♦ ♦ ♦

20 mph. Going to town on the bus was pretty routine, although everybody was squeezed together and some passengers had to sit on a let-down board in the aisle. At top speed the bus seemed to make a good 15 miles per hour but perhaps I'm too pessimistic. Let's say 20 mph. I never did find out what make of bus it was since it seemed to have parts and pieces from many places. The baggage was piled and roped on top.

It was late afternoon when we landed and it was after dark by the time the bus had crawled up to the crest of the pass and started on the long drag down the mountain. Although unpaved, the highway was in pretty good shape. Since there are very few cars and trucks in the country we weren't bothered by traffic except for the peasants who had to whang the daylights out of burros to get them out of the way, and at one point we had to wait for a flock of sheep to move off the road.

Then it began raining by the time we wound through the town to the JAT passenger terminal. All passengers and baggage were unloaded and the bus driver went home to dinner. All the hotels were a considerable distance away. The rain was coming down hard. All efforts to corral the few taxis in town failed. So finally the local JAT manager sent for the bus driver and

he drove a bunch of us to our respective hotels.

♦ ♦ ♦

Expedition. Three days later when I left Split it was a different story. Passengers were told to report to the terminal office at 10 a.m. The bus was to leave at 10:30. We finally left at 11:10 and I must say it was quite a sight. There were 23 passengers, the bus driver, and the local JAT manager who was going on to Belgrade. I was the only non-Yugoslav.

It took some time to get the baggage on top of the bus and roped down. Then we all piled in and it was quite a squeeze. I sat in the front row with my coat on my lap and wished my friends could have seen me. My Yugoslavian friend, Asa Marberger, was sitting on a backless seat in the aisle. We must have looked for all the world like an expedition heading through unexplored territory.

The bus was parked on a slant and for the good reason that the starter could hardly percolate. So the driver merely released the brake and got the engine started before we hit the next corner. It was a sharp corner and the streets were narrow. The driver was a corker. As soon as he, at the front of bus, reached the intersection, he whirled the wheel without the slightest regard for the fact that he had a bus behind him. So the rear end went over the curb, although there was room enough to swing the bus properly if he had had any sense of driving and distance.

Near Squash. We had to swing around another corner shortly and without taking his foot off the accelerator the driver gave the wheel a big swing. Around we went with the front left wheel way up on the sidewalk. A girl was walking along, saw the bus coming, and quickly leaned up against the building and the bus just missed her by a few inches. It came close to being a grand squash. But the girl shrugged her shoulders and everybody in the bus laughed. I just shuddered slightly and looked at Marberger who was looking at me to find out what I was thinking.

Near the outskirts of the town we came to a railroad crossing. Just as we approached, the crossing gate went down. We pulled up and stopped. No train was in sight. Three men in the gate house relaxed. Horses and wagons began accumulating on both sides. Pretty soon my driver yelled out to the gatekeeper but the latter paid not the slightest attention. Kids were playing on the tracks. Pedestrians continued to cross around the gate.

A soldier walked by and yelled to the driver "What are you so excited about? You'll have another blow-out anyway. What's the hurry?" At this exchange everybody in the bus began laughing and making wisecracks and it was plain to see that nobody was in a hurry. The Yugoslavs have a good sense of humor. By my watch it was 15 minutes before a train showed up. It was a freight. The driver managed to get the engine started and we were all set to go when the train came to a stop with three cars yet to pass by the street. We sat another ten minutes while pedestrians and kids hopped through the train. Finally it moved on.

Forgotten Crank.

We were making good time for quite a while. We had gone about a third of the way up the mountain when the driver stopped at a roadside store. He crossed the road and got some water for the steaming radiator and when he returned he found the front left tire was low. So with much ado he and the local JAT manager got out the tire pump. At last they got back into the bus, got the engine started, and off we started again to the accompaniment of cheers from the passengers.

A quarter of a mile up the road the driver suddenly stopped. Now what, we thought. He got out of the bus and ran back down hill. Seems as though he had forgotten his crank. In due time he trudged up the road with the lost crank. Then the engine wouldn't start. It took a good ten minutes of effort on the part of the two men. Gasoline was poured into a tin tray from a can and all the while the JAT manager held a cigarette in his mouth and the fumes were all over the place and I thought it would be a miracle if we didn't go up in flames. Sitting where I was, I wouldn't have had a prayer to get out alive. Finally the JAT man threw away his cigarette.

♦ ♦ ♦

No Food.

Near the bottom of the mountain we had passed some peasants girls leading their burros. They passed us twice when we were stalled. But now we passed them for the last time and made the top of the mountain and were making wonderful progress toward the airport when the left tire really let loose. So with a lot of expert advice from all passengers, the tire finally got changed.

We made the 24 miles to the airport in three hours and ten minutes! Lunch time had long since passed although some foresighted passengers had brought sandwiches along. The incoming load of passengers and crew who had been waiting for hours at the airport for our bus to arrive had just about eaten every bit of food in the canteen. It was chiefly coarse bread and ham that was only half-cured. I had a raspberry soda drink for lunch.

A strong cross-wind was blowing but we took off regardless, with us passengers, a crew of four, and our JAT manager. We had no stewardess (and hence no slivovitz) because her leave time arrived when the plane landed at Split so she went into town. But in an hour and a half we had crossed the mountains of Serbia and landed at Belgrade, an airport that seemed like home by this time.

Around the World

Britain to Levy Passenger Fee

A SERVICE charge for each airline passenger arriving in Britain at a state-owned airport, from any place other than the United Kingdom, Channel Islands and Isle of Man, is to be collected by the Ministry of Civil Aviation starting May 1.

Purpose of the charge, MCA said, is to help pay for the cost of providing passenger services and facilities at the airports.

The announcement, which came as a surprise to operators, said that the rate will be 70c for each passenger arriving from Europe, and \$1.05 for each passenger, from outside Europe. Thus, all passengers from the U. S. on Pan American World Airways and TWA will be subject to the \$1.05 charge.

British Overseas Airways Corporation and British European Airways immediately announced that they cannot afford to meet the extra costs out of revenue, and that such costs will be passed on to the passengers. PAA and TWA have not indicated what procedure they will follow.

The service charge, which will be collected upon arrival, does not apply to British internal services because of the high duty imposed on gasoline used in such services, it was said.

TRANSPORT

Two important subjects are slated for detailed discussion at International Air Transport Association technical conference meeting in Copenhagen, May 5-16. They are (1) consideration of all factors affecting approach and landing of aircraft; (2) exchange of views on future air-borne radio equipment. Purpose is to develop a coordinated and overall picture of the two fields, in order to assist development now going on in their individual phases.

Aircraft overhaul depot being established at Lydda by El Al Israel Airlines and the Israeli government will be ready for use as soon as equipment now en route from U. S. arrives and can be installed. Thirteen international carriers will use the depot.

Aigle Azur, French independent airline, has opened twice-monthly service with Boeing Stratoliners between Paris and Hanoi, Indo-China, via Marseilles, Athens, Beirut, Bahrain, Karachi, Delhi and Calcutta.

Iberia, Spanish airline, reports following approximate statistics for 1951: 400,000 passengers carried against 300,000 in 1950; 32,295 hrs. flown against 31,321; 16,000 schedules operated against 14,500.

Swissair carried 281,748 passengers in 1951 against 191,625 in 1950. Freight poundage increased from 5,168,816 to 7,788,363.

KLM Royal Dutch Airlines in 1951 carried 498,516 passengers, compared with 416,007 in 1950. Passenger load factor was 67.9%. Freight was up 25.1% from 22,671,000 to 28,371,000 lbs.

Central African Airways' fleet of Vickers Viking transports, which had been grounded for replacement of main spars, has returned to regular operation. The airline's program of expanded operations, scheduled for Jan. 1 and suspended following the grounding of the Vikings, will begin almost immediately.

Scandinavian Airlines System will increase Tokyo flights from one to two weekly in April. The new trip will be routed via Cairo, if landing permits are granted, Karachi and Rangoon. Present flight is via Lydda, Karachi, Calcutta and Bangkok.

Brazilian Civil Aeronautics Department has advised Pan American World Airways that it must pay \$558,193 in landing fees for the period January, 1949, to April, 1951, or face legal action, according to reports from Rio de Janeiro. Although PAA would not comment, it is understood that the company is attempting, through U. S. government representatives, to arrange payment through an offset against substantial sums allegedly owed the carrier by the Brazilian government. Brazilian airlines had refused to pay the fees, taking the matter to the Brazilian Supreme Court, which recently ruled the charges constitutional.

MANUFACTURING

Bell 47 helicopter is to be manufactured under license in France by SNCA du Nord, French nationalized aircraft manufacturer.

SNCA du Sud-Est will build an initial series of 200 Sikorsky S-55 helicopters under license from United Aircraft Corp. Components may be produced in Italy and possibly Germany as well as France.

Auction of plants and equipment of Caproni, Italian manufacturer, will be completed by the end of March, and the firm will go out of existence.

Flight testing of the first Series II de Havilland jet Comet, the version fitted with four Rolls-Royce Avon turbojets (6,500 pounds static thrust each), has begun at the company's plant at Hatfield, England. Twenty-four of the 45 Comets now on order are of the Avon version.

AIRPORTS

Precision approach radar is now available at Schiphol Airport, Amsterdam, for limited operational use.

South Africa's new \$15,000,000 airport at Johannesburg, Jan Smuts Airport, will be used for the first time within a few weeks. Its main 10,500-ft. runway is completed and will be used for tests by BOAC jet Comets soon. Original 1945 plans for the terminal have shrunk appreciably as building costs have mounted. Hotel and pleasure resort plans have been dropped, two terminal buildings have been combined into one. Hangars and workshops will be according to original plan. Main runway is designed to take aircraft of an all-up weight of 175 tons.

News At Deadline

Bunker Heads Martin In Reorganization

In the first step in reorganization of The Glenn L. Martin Co., George M. Bunker has been elected president, general manager and a director, succeeding C. C. Pearson in all three positions, and J. B. Wharton, Jr. has taken over from Richard L. Johnson as vice president-finance.

Resignation of Pearson and Johnson in the posts mentioned were accepted by the board of directors, but they will stay with the company in undesignated jobs "for the present, to provide assistance and continuity."

Directors have called a special stockholders meeting for April 2 to act on details of the recently-announced financing plan, which will bring \$32,000,000 in new capital into the company. Major item will probably be a vote for approval of an offer of new capital from a group of private investors organized by Smith, Barney & Co., New York.

Bunker, 44, has been president and general manager of Trailmobile Inc., Cincinnati, a subsidiary of Pullman Inc. He had been with that company since 1949, and prior to that was vice-president-manufacturing of Kroger Co., Cincinnati.

Wharton, 37, was vice president and treasurer of Trailmobile, and prior to 1949 had been with Noma Electric Corp.

Janas May Stymie Colonial-NAL Merger

Colonial Airlines' management is said to face stiff opposition in its attempt to merge with National Airlines because of the power still held by Sigmund Janas, Sr., ousted president.

Janas holds about 40,000 shares, or 8%, of Colonial's outstanding stock and may be able to block approval of the detailed merger contract, it is felt. The agreement entered into between Colonial and National last December was merely a preliminary understanding.

Meanwhile, court proceedings against Janas have been delayed and possibly side-tracked. The U.S. Attorney's office in New York, questioned about the case, said "when it's reached we'll try it." The clerk's office at the court revealed that the case has been removed from the calendar. In Washington, however, CAB sources said their information was that the crowded docket in New York had caused postponement of the proceeding in February.

Allegations against Janas involved, among other things, falsification of company records, and cases where company funds "were diverted to the personal benefit and enrichment" of Janas.

Duff to Head Colonial

Donald A. Duff will shortly replace Alfons B. Landa as president of Colonial Airlines, according to industry reports.

Landa, Washington attorney who succeeded Sigmund Janas, Sr., last June, is said to be considering affiliation with another airline in a different capacity than that held at Colonial. His troubleshooting during the past nine months is considered generally responsible for Colonial's recovery.

Duff has been executive vice president and general manager of the airline since the first of the year. His functions since that time have generally been those of company president.

Doolittle Names Staff

A working staff of five has been named by Lt. Gen. James H. Doolittle, Chairman of the President's Airport Commission which is to investigate the problem of close-in airports (see page 19).

Staff includes Capt. W. P. Cogswell, Navy; Col. Ross Milton, Air Force; Phillip A. Hahn, CAA; A. D'Arcy Harvey, CAB, and John W. Crowley Jr., NACA. The commission has established headquarters in CAA's offices in Temporary Building 4, Washington, D. C.

Doolittle said the Commission will probably make field trips to the airports in the New York, Chicago, Los Angeles, and San Francisco areas.

Components Priorities

Producers of military aircraft components will start receiving A-1 priorities on a product basis in placing controlled materials orders in the fourth quarter. NPA has agreed to let the Aircraft Production Resources Agency at Dayton administer CMP allotments for steel, copper and aluminum after Oct. 1, meanwhile promising that firms will get assistance if they cannot place their orders at the mills.

C & S Adds 2 Convairs

Chicago and Southern Air Lines has exercised its option for purchase of two Convair 340's in addition to the eight for which it contracted last November.

G. E.-British Jet Deal

General Electric Co. and de Havilland Engine Co., Ltd., of England have worked out an arrangement to exchange experience and information on jet engine development, including an agreement to interchange key technical people.

Not included in the contract is information on G.E.'s work on an atomic aircraft engine. Such information, along with other data on progress in atomic energy, has not been going to Britain since it was discovered that Klaus Fuchs, a top British atomic expert, had been furnishing information to the Soviet Union.

Non-Sked Ruling Upheld

CAB's suspension of operating rights for New England Air Express, a large irregular carrier, has been upheld by the U.S. Court of Appeals for the District of Columbia. Court ruled the Board's action in suspending the carrier's letter of registration until it shows the public's rights will be protected in its operations was justified.

C-46 Promotion Fund

Non-sked operators of C-46's will contribute \$1,000 for each Curtiss C-46 they fly for a program to renew public confidence in the plane, as a result of a resolution approved by the Aircoach Transport Association. The Association also condemned unethical practices of ticket agents and voted to support an airlift preparedness bill. A 10-point safety program was also approved.

Helicopter for Trucks

Army is working on a long-range program to replace its trucks with large helicopters, thus eliminating the engineering manpower required to prepare roads for surface vehicles. Brig. Gen. Gerald J. Higgins, chief of the Army's Organization and Training Division of Operations, says also that one-man helicopters, now under development, will be used mainly for reconnaissance rather than mass movement of combat troops.

Hearing on Agents' Fees

CAB has decided to hold public hearings this month on the controversial proposal of international airlines to cut travel agents' commissions from 7 1/2% to 6% on sales of Atlantic tourist tickets. Case resulted from formal protests by American Society of Travel Agents.

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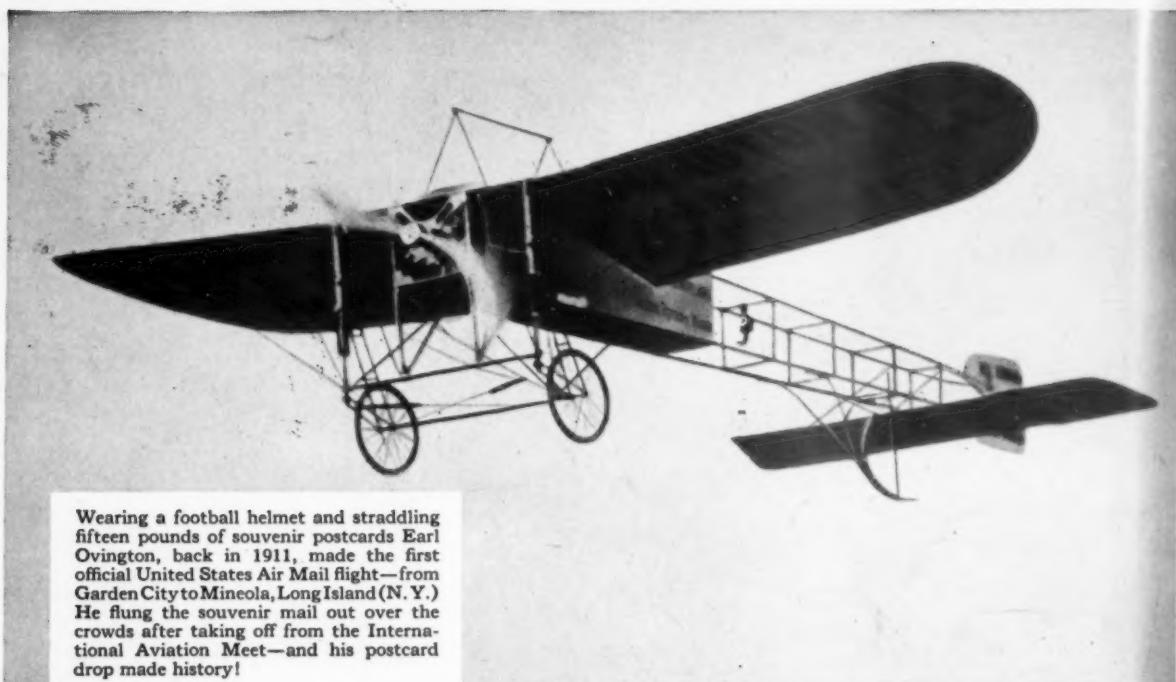
When you want the answer to an important problem in medicine, you naturally turn to a specialist...a man whose talent and experience set him apart as the authority in that line. It's much the same in any field. Your selection of the instruments and accessories for your planes is an example. The name Eclipse-Pioneer automatically comes to mind. Eclipse-Pioneer has been a leader since aviation was in its infancy; more than 1,000 of its employees have been with Eclipse-Pioneer for over 10 years—many of these for more than 20 years; many of its engineers are top-ranking men in this field. As a result, Eclipse-Pioneer has consistently demonstrated its ability to design and manufacture to civil and military specifications. Take advantage of this great team...for experimental or operational equipment, in development or mass production quantities, call on Eclipse-Pioneer.

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First U.S. Air Mail Flight-1911



Wearing a football helmet and straddling fifteen pounds of souvenir postcards Earl Ovington, back in 1911, made the first official United States Air Mail flight—from Garden City to Mineola, Long Island (N. Y.) He flung the souvenir mail out over the crowds after taking off from the International Aviation Meet—and his postcard drop made history!

Just as air transportation has made miraculous advancements since the days of the first air mail flight—so has petroleum.

Phillips Petroleum Company has kept pace with the developments of the aviation industry—for airplane engines can only operate within the limits of the fuel that powers them. Today Phillips is one of the nation's largest producers of aviation gasoline for both military and commercial planes. With each new development, Phillips is ready with new fuels to meet the latest demands.

Rely on Phillips when you want dependable aviation products.

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FORTY YEARS LATER in September, 1951, a twin-pontoon helicopter belonging to the Port Authority of New York made the same trip commemorating the 40th Anniversary of Ovington's first air mail flight. This time the cargo was 1500 air mail letters destined to board a trans-continental airliner at LaGuardia Airport, headed for points west.



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